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ABSTRACT

A statement of purpose for Educational Radio and Television of Iran (ERTI) in Iran's education and development process proposes that ERTI act as a leader and innovator in programs covering a wide range of subject matter and involving both broadcasting and non-broadcasting activities. A balanced program is suggested here which would enable the organization to have a much greater effect on Iran's needs than its present limited activities. Subsequent sections include the statement of purpose, a description of how it was developed, and recommendations for specific activities which would make the statement operational. The final section describes the implications of the statement for implementing programs given ERTI's staffing and facilities. (Author/VT)

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STATEMENT OF PURPOSE FOR EDUCATIONAL RADIO AND TELEVISION OF IRAN

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NATIONAL INSTITUTE OF EDUCATION

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

by

Lawrence T. Brekka

December 1976

Technical Report No. 18
Prepared under
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Radioscience Laboratory
COMMUNICATION SATELLITE PLANNING CENTER
Stanford University
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STATEMENT OF PURPOSE--INTERNAL REPORT

A. INTRODUCTION

This document proposes a statement of purpose for Educational Radio and Television of Iran (ERTI) in Iran's education and development process. The role proposed for ERTI is that of leader and innovator in education and development programs. These would cover a wide range of subject matter and involve both broadcasting and non-broadcasting activities.

ERTI's present activities are limited compared to what they might be. A balanced program of activities is suggested here which would enable the organization to have a much greater effect on Iran's needs. The proposed activities would also enhance the credibility of ERTI as an organization able to get things done, and improve the efficiency of its internal operations.

The following sections contain the statement of purpose, a description of how it was developed, and recommendations for specific activities which would make the statement operational. The final section of this document describes the implications of the statement for implementing programs given ERTI's staffing and facilities.

B. STATEMENT OF PURPOSE

1. Statement

ERTI has as its purpose the support of education and development in Iran with a wide range of broadcast and non-broadcast activities. It will act as a leader and innovator in the introduction of new concepts, as well as a support organization providing assistance to other organizations responsible for programs.

The degree to which ERTI assumes the leadership and innovation role is a function of its own capabilities as well as those of other organizations concerned with the same education and development problems. ERTI will perform its role in a manner that will complement the capabilities of other institutions. When other institutions simply need assistance in matters relating to broadcasting, educational technology or the use of learning centers operated by ERTI, those services will be provided. When an institution requires temporary assistance until its own capabilities

are developed, ERTI will carry the responsibility for the required activity until the primary organization can take over. In cases where other institutions do not have the particular capabilities to respond to a problem, ERTI may assume full responsibility for the effort, even if it does not involve broadcast activities.

There are few precedents for an organization with the opportunities of ERTI to become involved in such a wide range of activities. An extensive planning and evaluation process will be maintained to explore new areas for ERTI participation and assess the effectiveness of the programs it does undertake.

2. Rationale

The statement of purpose presented here calls for a major, responsible role on the part of ERTI in dealing with education and development in Iran. The arguments which favor this approach over the alternative of ERTI maintaining simply a broadcast support role can be focused on three main points:

- First, Iran's needs are great, far exceeding the combined immediate capabilities of the organizations responsible for resolving them. Therefore, help is needed from any source with the ability to achieve results.

- Second, it is consistent with both national goals and NIRT policy for ERTI to assume a leadership and innovation role. A review of the June 1975 Mashad Conference proceedings, the papers prepared for that conference, and the Arthur D. Little study of NIRT's organization (Refs. 1-3) are consistent in their appraisal of the proper role of NIRT in development. They also agree in supporting the idea of NIRT and ERTI in particular becoming involved in non-broadcast activities when necessary to support national development.

- A review of the potential impact of ERTI broadcast and non-broadcast activities shows the leadership and innovator role to be both feasible and important. Whether cultural programming or occupational training is involved, there is a need for organizations capable of developing and implementing effective programs.

C. RECOMMENDED ACTIVITIES

It is recommended that ERTI carry out the leadership and innovation role with the activities described in the following paragraphs and summarized in Table 1. These activities are in addition to the organization's existing commitments. The recommendations include consideration of ERTI management's present priorities but do not match them exactly.

1. Candidates for Implementation

a. Instructional Services

Because of the potentially high impact, low risk and relatively low investment of ERTI resources required, it is recommended that the following instructional services receive major attention:

- Literacy, including basic education, motivation and follow-up support. Literacy training has the largest target audience of any of the instructional areas, some 10 million people. TV has a proven capability to reach more people than conventional training, by as much as tripling optional student-teacher ratios and allowing the use of less highly trained class instructors. The National World Literacy Campaign (NWLC) has developed the content for instruction, while ERTI could contribute the design of radio clubs for motivation and a follow-up support role.

- Agricultural Training. Between 50 and 60 hours of TV programming is expected to enable farmers to double or triple crop production and meet the demand forecast in the National Cropping Plan. These programs would be designed for the nation's two million small to medium size farm owners. Regardless of national policy regarding support of agribusiness vs small farms, small farm production has to improve over the next two decades as the largest element of Iran's output. The 50 or 60 hours of programming defined by Stanford should be detailed for production in cooperation with the Ministry of Agriculture. Negotiations should be held with the Ministry to coordinate with the necessary supporting activities required of the extension agents and service programs such as distribution of seeds and fertilizers.

- Teacher Training. The use of TV has the potential of greatly accelerating the staffing of Iran's schools, a key element in the nation's development process. Expansion of the Free University of Iran (FUI) program, and the introduction of TV-based programs for Ministry of Education in-service training and the Teacher Training

Table 1

Recommended ERTI Activities

General Activity	Subject Areas	Initial Activity
Planning and Implementation	Literacy	Joint committee with NWLC to prepare plan for ERTI participation
	Agricultural training	Negotiate with Ministry of Agriculture for acceptance of a TV-based training program.
	Teacher training	Develop proposal for - expansion of FUI use of TV - Ministry of Education in-service training by TV - Teacher Training University extension services via TV
	Higher education	Provide planning assistance to Pahlavi University
		Develop plans with RCUI and other institutions of higher education
	In-service training	Explore use of TV, radio and other media with GMTC
	Topical issues	Set priorities and coordinate selection of topics
	Motivational and service support information	Survey needs, set priorities and begin planning
Intensive study	Occupational training	Continue study of appropriate media and demand for particular skills
	Primary, guidance cycle and high school	Joint study with Ministry of Information on uses of in-school programming and tradeoff with teacher training
	Exchange of ideas	Assess experiences with concept, prepare proposal
	Existing ERTI programs	Impact and cost analysis
Maintain interest	Cultural, preschool, public education, rural and urban development skills	Maintain information on potential ERTI activities

University's extension services should be explored with these institutions. The content would be specified by each institution. ERTI should consider the potential of the live studio classroom and make appropriate recommendations for its use to avoid unreasonable demands for studio production.

- Higher Education. Planning assistance for increased use of TV should be provided Pahlavi University and other interested higher education institutions. TV would enable the institutions to expand their programs with as little as half the conventional number of faculty, and requiring less highly qualified staff. The areas of management, administration, and professional and technical studies have the greatest shortages. The use of the live studio classroom concept could be important in permitting rapid expansion. ERTI would be in a support role.

- In-service training of mid-management and technical and professional personnel. These categories have major shortages. ERTI should explore with the Government Management Training Center (GMTC) the use of TV, radio and other media to advance its nationwide program of in-service training. The use of live studio classrooms in broadcast or video cassette modes should be considered as the quickest means of meeting the need. ERTI might act as a broker between GMTC and educational institutions in the development and implementation of in-service media based programs.

b. General Audience

Topical issues and motivational programming are considered high priority areas by ERTI management. The resources required are reasonable although the subject areas are not well defined. In each of these areas ERTI would probably have primary responsibility for the activity. In some motivational areas, however, the primary agency may have the content design capability and wish to receive support only from ERTI.

The specific activities required are as follows:

- Topical issues. Priorities should be set on subject areas. The selection of subject areas by the independent producers at ERTI should then be coordinated so the most important subjects are covered.

- Motivational, including service support information. A survey of needs has to be taken and priorities set on the activities to be attempted. Planning should be begun.

2. Subjects for Intensive Study

The following areas require careful study before programs can be initiated:

- Occupational training. This is considered a high priority area by ERTI management, with potential for ERTI having full responsibility. However, the best use of different media for the many different subject areas and the demand for different skills in Iran are not sufficiently defined to permit selection of specific projects at this time. The Stanford studies on the role of various media and the demand for skills show that there is in fact a great need for these programs. They also show that the broadcast media are generally not appropriate. Major emphasis would be on the use of video cassettes, slides and audio tapes, and audio tapes and workbooks. The reason for this is mainly the difficulty of scheduling training periods to meet the needs of individual institutions.

- Primary, guidance cycle and high school. There is a need for a joint study with the Ministry of Education on the purposes of using TV for in-school instruction of children, and the tradeoff involved in using the same resources for teacher training. Available research shows that TV is more effective with adults in increasing the number of students who can be taught by a single instructor, and in permitting the use of mentors instead of more highly trained staff to interact with students. However, more attention has to be given issues of student motivation, improvement of curriculum content, the need for supplementary material not now available and the resources required to deal with each. ERTI should prepare a proposal for such a study and present it to the Ministry.

- Exchange of ideas. The local stations are the logical originators of programming to exchange ideas between communities. However, before a commitment can be made to this type of activity, experiences elsewhere in the world should be examined to assess what might work best in Iran. Once that is determined and projects selected, the activities of local stations have to be coordinated. ERTI could do the feasibility study and planning, and may or may not provide coordination.

- The actual or potential impacts and costs of ERTI's existing programs have to be assessed: children's books and games; IDI teacher workshops; System 80 and Hoffman teaching machines; primary, guidance cycle and high school programs; the FUI; Pahlavi University, and general programming. Any new contracts such as with the Revolutionary Corps University (RCU) of Iran should be assessed from this standpoint. However, because of the lack of evaluation personnel, priorities will have to be set on which projects are examined first and how extensive the assessment has to be.

3. Maintain Interest

There are several subject areas for which ERTI does not have the resources or whose potential impact is not clear enough to justify an investment. Updated information on the potential areas of participation should be maintained, but no planning done. The areas are as follows:

- Cultural. It is an important area but one which would drain a major portion of ERTI's resources. It may be appropriate to consider major productions in five to 10 years.
- Preschool. ERTI does not have the research and development staff to do highly sophisticated preschool programs similar to Sesame Street. If there is sufficient support and the NIRT networks do not want to do it, ERTI could hire the staff, but would take time.
- Public education. Since other agencies such as NWLC are addressing this area, it is lower priority than others, and great deal of planning would be needed to participate, ERTI should wait and see what areas are not served. It could fill the gaps at a later time.
- Rural and urban development skills. Again, these two areas are served by other agencies. ERTI's potential role and impact are not clear and would require a significant development effort. While higher priority than the public education category, other areas require attention first.

D. POTENTIAL ROLES OF ERTI

1. The Alternatives

There are two major alternatives for ERTI's role in Iran's education and development process. One is simply as a production organization meeting the needs of other organizations which have the responsibility for implementing programs. The other role involves ERTI assuming responsibility for leadership and innovation where there is an unmet need. The latter role involves the introduction of new education and development concepts by ERTI independently of whether the ideas are related directly to broadcasting.

The simple support mode has the advantage of (1) concentrating activities in the principal areas of ERTI's expertise, namely media production, (2) limiting staff needs, and (3) making budget requests easier to justify. There are two disadvantages. One is that ERTI would not control selection of the use of media so that it would be possible for ERTI's resources to be spent on programs of little value to Iran. The

other disadvantage is that the potential of ERTI's contributing innovation and leadership would be lost.

The leadership and innovation role has the following positive arguments:

- Major impacts are possible in some program areas using ERTI's capabilities in TV and radio. This conclusion is based on analyses of media-based programs around the world in such areas as literacy, agricultural training, and university expansion.
- There are potential areas of ERTI involvement where media-based programs may work, but there is little evidence to be found. An example of this is the concept of providing non-formal education programs for children with no access to schools. Innovation is needed.
- ERTI has or expects to have capabilities in non-media areas. For example, learning resource centers are facilities expected to play a number of roles including the provision of classroom space and community libraries. The specific roles of these centers are not defined, but, given Iran's development needs, it is expected that learning resource center services will be important.

Despite the potential of the leadership and innovation role, there is no assurance that it will succeed. Its major drawback is the uncertainty associated with the introduction of new ideas. ERTI would therefore risk failure, a loss of credibility, and eventually a loss of its role.

Another major concern is that ERTI could appear to infringe on the roles of other agencies. If sufficient opposition to ERTI developed because of that, it could mean relegation to the simple support role.

These problems associated with the leadership and innovation role require consideration. If they can be avoided in some way then ERTI might assume the responsibility of resolving a wide range of education and development problems.

2. Policy Considerations

In assessing ERTI's potential role, it is important to know the opportunities and constraints facing the organization from national and NIRT policy. Three documents were reviewed to obtain an understanding of the policy situation:

- Proceedings of the July 1975 Mashad Conference sponsored by NIRT (Ref. 1).
- A compilation of papers prepared for the conference (Ref. 2).
- The Arthur D. Little organizational study of NIRT reported in August 1975 (Ref. 3).

The following conclusions were drawn from the review:

- ERTI's mission is very loosely defined from NIRT's viewpoint. In fact, the ADL report emphasizes the undefined nature of ERTI's role.
- Within the context of NIRT goals and policies, ERTI can, and would be expected to, explore the possibility of becoming involved in a wide variety of activities. Table 2 lists proposed NIRT goals compiled from the proceedings of the Mashad Conference. Although the "educational" aspect of these goals may have to be emphasized, they should represent goals suitable for ERTI.
- The manner in which ERTI carries out its mission is not restricted to broadcasting activities. All the sources reviewed (Refs. 1-3) supported the idea that ERTI should initiate non-broadcast activities where other organizations are, for some reason, not able to respond to a need. This is entirely consistent with NIRT practice.
- Within NIRT the new organization concept developed by NIRT emphasizes competition to improve accountability both to the government and the audience. There are program areas, such as cultural or issue subjects, where the NIRT networks have at least nominal responsibility. However, ERTI might well argue a case for its own participation in those areas on the basis that the competition would spur creativity and effective programming.

Thus, there is a potentially broad mandate and a correspondingly wide range of activities that ERTI might undertake. The major issue in defining a role for ERTI is then to determine a range of activities that make sense for Iran and ERTI as an organization. The broad statement of purpose given in Section II is adequate only to the extent it reflects the ability of ERTI to be successful in undertaking education and development programs.

3. Additional Criteria

The loose policy definition of ERTI's role is not adequate for making choices on the organization's future. Additional criteria are suggested to help determine the specifics of ERTI's role.

Table 2

Possible NIRT Goals Relevant to ERTI
(Compiled from Ref. 1)

- Provide a legitimate, credible structure for people to express their needs.
- Provide horizontal and vertical communication linkages at all levels of society.
- Help adaptation to new social and psychological situations; demonstrate role models for a new way of life.
- Promote human dignity.
- Communicate pride in the nation's cultural; communicate traditional values; popularize traditional art and culture; provide local community support for cultural preservation.
- Give insight into other cultures.
- Stimulate and commission creativity.
- Raise people's awareness of development projects and opportunities; help foster attitudes and motivation that contribute to development.
- Provide support for specific development projects and social services, e.g., health care delivery, vocational skills, public health, sanitation and family planning.

So far the discussion has centered on ERTI's role in terms of attacking Iran's problems and the general mandate of NIRT to participate. If ERTI is to have a beneficial impact on the nation's problems, then it must function well as an organization. As mentioned earlier, failures in its programs would lose the organization credibility, and in turn its proposed role as a leader and innovator. If ERTI does not function efficiently, it will not use its resources well, the morale of its staff will fall and its products will suffer.

Therefore, it is recommended that the following criteria be used in the selection of a program of activities for ERTI:

- Meet Iran's needs in a significant way
- Develop ERTI credibility by achieving visible success
- Develop efficiency as an organization

4. Assessment of Potential Activities

a. Basic Information

The selection criteria have to be applied to particular program areas. The following information should be obtained in each case:

- A definition of the educational or development need
- Possible relations of ERTI to other institutions concerned with the same program area
- Possible ERTI activities based on its capabilities
- The potential impact of the program
- The importance of ERTI's role
- ERTI resources required
- An assessment of the risk of failure

Some of these points require clarification. First, definition of the need should be expressed in quantitative terms whenever possible. Where there are important qualitative characteristics they should be presented in a clear descriptive statement.

There are three types of relations ERTI could assume with other institutions:

- ERTI could assume complete responsibility for the design, production and implementation of educational programs. This would occur when established agencies are not able to carry out a program.

- In cases where other agencies are not immediately able to implement programs on their own, ERTI could assist in the initial phases. The other agency would assume increasing responsibility as its own capabilities develop, and ERTI would eventually pull out completely or keep a long term support role in the specific areas for which the agency will not develop capabilities.
- Where other agencies are capable of designing and operating programs, ERTI can provide selected support. This could be in production, message design, use of ERTI Learning Resource Centers or other narrowly focused activities.

b. ERTI Capabilities

Existing, planned and possible ERTI capabilities are listed in Table 3. They range from conventional broadcasting activities to community-oriented services. The important point is that the range of capabilities permit ERTI to approach a problem and find out what is needed to resolve it, not try to fit a limited set of skills to it.

c. Possible Program Areas

The possible program areas are shown in Table 4. That list represents a starting point for ERTI to consider what it wants to do. During the review and decision-making process which will select the first combination of activities, the areas should include more specific programs.

The areas are organized into three categories:

- General audience. This includes cultural programs and others aimed at the population in general, with no direct feedback required. General TV and radio broadcasting would be the most common distribution method, although slide/tape and other means might be used.
- Informational services. These provide suggestions on how people can make use of government programs, and information on the availability of products or services for economic and social development. Typically this would utilize TV or radio spot announcements, although special full-length broadcasts and other media packages, e.g., film-strips, could be used.
- Instructional services. These involve direct interaction with students. Learning objectives are set for particular skills or knowledge, support staff and materials are provided, and certification of completion is given to successful students. The programs can utilize a full range of educational technology, and often involve direct participation by agencies normally responsible for education or development programs.

Table 3

ERTI Capabilities

Existing or Planned

- TV broadcasting. On the order of 50% of the nation's population is covered. Time is limited since ERTI has to use the network channels but additional channels can be added in areas of existing coverage at small cost. Satellite transmission will be able to provide full coverage in the future.

- Radio broadcasting. Close to 100% of the population is covered by radio. No information is presently available on the time that ERTI can claim.

- TV production. With the new facilities some 300 to 700 hours of programming can be produced per year. This assumes the use of techniques similar to what is now being used.

- Radio production. Some 1,000 to 1,500 hours of programming can be produced per year with the new facilities. Very little radio programming is done right now.

- Multi-media production. Film, slides, audio tape, teaching machines and books can be designed and produced.

- Teaching concepts can be developed and applied, perhaps independently of the media.

- Learning Resource Centers. Their role is not yet defined, but could include a variety of support activities for communities:
  - library of books and audio-visual materials in support of local schools and the community in general
  - classroom for adult education and training programs
  - provision of staff to serve as coordinators or even mentors in education and development activities

Possible

- Mobile units might be considered which would be similar to Learning Resource Centers but play a more direct role in supporting communications between communities.

Table 4

Potential ERTI Program Areas

1. General Audience
   - Cultural programs
     - preserve elements of traditional Iranian culture
     - suggest adaptation of tradition to modern conditions
     - suggest role models for a new way of life
   - Topical issues, e.g., drugs, status of education, ERTI's role, 17 points of the White Revolution
   - Promote an exchange of ideas among communities and between people and the government.
   - Motivation programs to increase public participation in education and development activities.
   - Preschool - aimed at both the home and preschool institutions.

2. Informational Services
   - Identification of social services and means of access, e.g., participation in social security.
   - Identification of sector support services and means of access, e.g., agricultural extension agent activities.
   - Services identified as necessary for the support of ERTI instructional activities.
   - Public education programs on subjects such as health care, nutrition, sanitation, family life, child care, religion, career guidance, personal finance, home maintenance and automobile maintenance.

3. Instructional Services
   - Adult literacy
   - Basic education (non-formal education for school age children)
   - Rural development skills
   - Urban development skills

Table 4 (cont)

Potential ERTI Program Areas

- Occupational training (including health paraprofessionals)
- Agricultural training
- Teacher training
  - FUI
  - Ministry of Education in-service
  - College/University extension
- Primary school - classroom programs for students
- Guidance cycle - classroom programs for students
- Secondary school - classroom programs for students
- University expansion
- In-service (college or university level)
  - business and industry
  - national government agencies
  - provincial government agencies
  - city agencies

The program areas listed in the table are examined in the Appendix in terms of Iran's needs and ERTI's ability to meet the needs.

d. Summary of Assessment

The major points to be drawn from the assessment are as follows:

- General Audience

  - Cultural programs require more extensive resources than ERTI can afford to devote over the next few years.
  - Topical issue programs are a high priority and can be done by ERTI. The selection of specific topics by producers has to be coordinated to produce the maximum effect and enhance ERTI's credibility.
  - Motivational programming is considered very important. A survey of needs is required before specific subjects are selected.
  - Exchange of ideas among communities would best be done by local stations. ERTI could provide much needed planning and coordination support.
  - Preschool programming is also important, but beyond ERTI's present capabilities. If ERTI is requested by NIRT to do it, research and development staff would have to be hired.

- Informational Services

  - Information provided to facilitate public use of available services is seen by ERTI as a follow-up to motivation programs and would be included in the latter.
  - Existing and planned public education programs by other institutions are not expected to meet all the needs. ERTI could fill the gaps.

- Instructional Services

  - Literacy training has the largest target audience of any of the instructional service programs, some 10 million people. TV has a proven capability and can significantly improve the efficiency of the campaign. Since the program has very high national priority, ERTI could gain a great amount of credibility with a successful effort. The investment is small, for direct instruction with basic TV programming requirements on the order of 100 hours. In addition the NWLC is interested in having ERTI develop radio clubs to motivate students and provide follow-up materials. There is no estimate of non-broadcast media needs. The content planning and organization of the national effort is underway by NWLC.

- Agricultural training has a large audience of over two million farm owners. A relatively small amount of TV programming, 50 to 60 hours, is expected to enable farmers to double or triple their crop production. Planning is well along with all the major subjects defined by agricultural experts. Non-broadcast media and radio have not been considered in depth.

- Teacher training with TV has the potential of greatly accelerating the process of staffing the nation's schools, a key element in Iran's development process. ERTI's present support of the FUI is only one of several possible activities. Expansion of FUI's use of TV should be explored. In-service training via TV by the Ministry of Education and a TV-based extension service for the Teacher Training University are other possibilities. More information is needed to determine the scope of each program. One way to avoid taxing ERTI resources is to use the live studio classroom concept.

- Higher education and in-service university level TV-based programs can be very cost-effective. The experience of Pahlavi University and others indicate that ERTI could gain much in credibility with a small investment. Production limitations can be overcome with the use of live studio classrooms. The same format might be better used in video cassettes to give the user more flexibility in scheduling. Radio or audio tapes with slides or workbooks might be effective and less costly, but this would have to be determined for each application. A related activity uses video cassettes to disseminate management information from control management to lower echelons and branch offices. This serves to improve management procedures and lower level management skills.

- Occupational training is highly specialized. For a given development and implementation effort fewer people may be reached than by literacy or agricultural programs. Present planning activities must continue to identify the best media to use for various skills. Generally, the broadcast media are precluded and attention given to the use of video cassettes, audio tapes and workbooks, and slides and audio tapes. In parallel with the study of media, the demand for training by type of skill must be assessed.

- Basic education programs are a part of the literacy campaign. ERTI should be able to act effectively in a support role to NWLC. The amount of production required for either broadcast or non-broadcast media is not defined, but it has to be so the commitment required from ERTI can be assessed.

- Rural and urban development skill programs have not been examined at a level that permits definition of specific subjects and the appropriate media. The area appears to be important and ERTI should be able to contribute.
- Primary, guidance cycle and secondary school activities are already underway at ERTI. However, the effectiveness of the present activities is not known. This has to be examined, and a tradeoff studied between the use of media directly with children and its use directly with teachers. Education of the handicapped should receive special attention in examining potential projects.

The overall picture is one of program areas in various stages of definition or implementation. The issue facing ERTI is how to choose a set of activities worth pursuing.

5. Selection Process

ERTI must decide which of the program areas of Table 4 are to be selected for participation. Whatever the decision, there is a major question of how to apportion resources over the various areas selected.

Since all of the areas examined are important for Iran, the other selection criteria discussed earlier should be considered. Applying the criterion of credibility, program areas should be developed which can have the greatest impact and require the least resources. The latter objective would avoid overextending ERTI's staff, enhancing the staff's ability to do quality work and contributing to the other criterion discussed earlier, the efficient operation of ERTI as an organization.

Care must be taken in comparing the various program areas to come up with a single priority list. The quantitative measures of increased agricultural production cannot be compared by a formula to the expected benefits of cultural programs. It is, however, very important that the potential benefits be described as clearly as possible, as well as the number of people benefiting. Then, the amount of resources that would have to be allocated to each of the three areas can be compared to the type and extent of the benefits by ERTI management and a decision reached on the final set of activities. The result should include a balance of the various types of programs. When there is inadequate information in certain areas, such as motivational programming, consideration should be given to reserving resources for a time when an informed decision can be made.

The selection of a particular medium should be based on solid information about its educational effectiveness and its ability to alleviate needs in Iran. Education programs using a medium must be at least as effective as the best conventional approach available to the target audience.

The best medium is of little value if it cannot reach the people in need in a timely manner. Therefore, consideration has to be given factors such as TV and radio coverage, the ability of ERTI to distribute packages of materials and equipment, and maintain the equipment. These determine how many people can be reached and when.

Another important consideration is the time required to develop and implement programs based on different media. Delays in reaching people slow the improvement of social well-being and the development of Iran. It may be better to use a less effective, but at least adequate, medium to reach people sooner. Improved programs based on different media might then be introduced later.

These considerations have been taken into account in making the recommendations on ERTI's future activities described in Section II.

E. ORGANIZATIONAL IMPLICATIONS

While a list of recommended ERTI activities has been developed and given in Section II, it does not show how they can be phased in over time. ERTI does not have the planning, development and production capacity to begin these efforts at the same time. This section considers the scheduling problem as well as the broader one of managing ERTI.

1. Facilities and Staff-Capacity for Projects

The TV production requirements implied by the above list are shown in Table 5. No estimates have been made for radio or non-broadcast media production. Development of a reliable estimate requires review of the various program areas with ERTI staff and appropriate outside agencies to determine what is needed and what might be done.

The TV production requirements show that the selection of instructional programs can be made in a way that allows ERTI to have a significant effect on Iran's needs and at the same time leave production capacity for the important general audience and informational programs. A total of

Table 5

TV Production Requirements

Program Area	Amount of Programming Hours*
Existing Commitments	168 (Ref. 17)
Literacy	100 (Approx.)
Agriculture	60
Teacher Training	a
Higher Education	b
In-service Training	c
General Audience - topical and motivational	d
	328 + a + b + c + d

* a,b,c and d are values to be determined so the sum 328 + a + b + c + d equals ERTI's production capacity. a,b and c can be kept low by using the live studio classroom concept for major programs, and limiting studio production to selected subjects.

about 300 hours of programming (less if sophisticated production methods are used) is available for general audience and information programs, teacher training and higher education, assuming an annual capacity for ERTI of 700 hours.

Decisions on project selection are needed before realistic values can be assigned for a, b, c, and d. However, the conclusion still holds that ERTI does not have a serious capacity problem.

Detailed problems of facility and staff exist, but their resolution involves more of steady, systematic work than dramatic changes in policy or organization of ERTI. These problems are dealt with in Ref. 18.

What is most critical in setting a direction and purpose for ERTI is the decision process and supporting information system used to control on-going projects and select new ones. That is the subject of the following section.

2. Decision Process and Information System

a. Basic Concepts

All decisions concerning the future of existing projects and the selection of new projects should be based as far as possible on the objectives of meeting Iran's needs and developing ERTI's credibility and efficiency. To the extent that ERTI has to respond to certain requests from NIRT and Ministries, the ability to apply these criteria is lessened, particularly the latter two of developing credibility and efficiency. However, a clear assessment of potential impacts, costs and alternative approaches can help shape agreement on the most effective means of pursuing the objectives sought by NIRT or the Ministries.

Another important consideration for project control is that decisions on existing or potential projects cannot be made individually. Each decision must take into account:

- the status of the departments and projects;
- the potential impact of the alternative new projects, and the ERTI resources they would require; and
- ERTI resources available over time.

It is necessary to consider the choice of new projects and changes to existing ones over some selected time period. Potential new

activities cannot be expected to be at the same level of planning at the same time. Therefore the information needed to choose between alternatives will not be at the same level of development. It may be necessary in some cases to postpone implementation of one set of activities until more information is obtained on a potentially better set. A process for controlling both existing and new projects is presented in the following section.

b. Project Control

The Planning Department is presently developing a project control system for use at ERTI. The basic concept has been approved by the Managing Director. It would provide for monitoring and direction of existing projects and selection of new projects.

The process would eventually involve use of a Project Control Committee to review reports on the status of projects and departments, and proposals for new projects. New project proposals would be studied by a Project Selection Committee, and, if approved, a more complete proposal prepared. The idea is shown in Fig. 1.

At the present time the Planning Department can perform the functions of the Project Control Committee. As the work load increases, and as more is learned about which departments and individuals should play a strong role in project and proposal review, a formal committee can be established.

The procedure proposed for project and proposal review and decision-making over the short term is as follows:

- Project review. Monthly reports submitted by the Department and Project Managers would be summarized by the Planning Department. These reports would describe the status of department and project activities and suggest solutions to major problems. The Managing Director should then review the summary, and decide which means of solving the problems are to be approved. The more difficult problems could then be dealt with in a meeting with the appropriate managers.
- Proposal review. There are several steps in this process as shown in Table 6 and Fig. 2. The planning department would maintain an up-to-date status report on project and department activities, present and planned. Available resources over time, and the potential impact and cost of various types of prospective projects would also be kept up-to-date. The Budget Division of General Services would assist with the cost data. From this information the Planning Department can

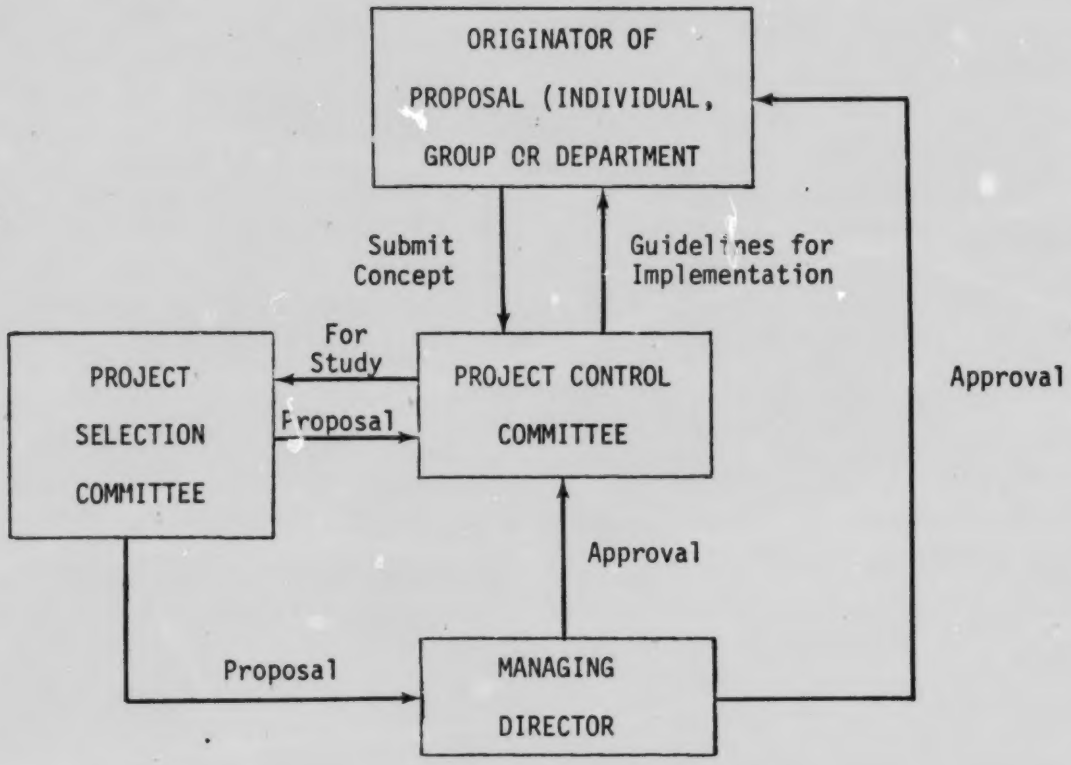


Fig. 1 Project Control Concept

Table 6

Proposed Project Selection Steps

1. An individual, group or department develops an idea for a project.

2. The Planning Department specifies guidelines for preparing a summary proposal. It also provides information on how the general subject area is rated in ERTI's priorities, and when it might be most feasible to undertake such a project given ERTI's present commitments.

3. The summary proposal is then submitted to the Managing Director. After review it is turned over to the Planning Department for assessment.

4. The Planning Department submits an appraisal to the Managing Director of what impacts could be expected and the resources required at ERTI, and a comparison with other potential new projects under consideration.

5. The Managing Director alone or in consultation with department and project managers approves or disapproves the development of a full proposal.

6. If approved, a Project Committee is named to develop a detailed proposal. The Chairman (Project Leader) would be authorized to meet with outside agencies as appropriate to coordinate development of the proposal with their needs.

7. The complete proposal is submitted to the Managing Director who, alone or in consultation with the Managers, approves or disapproves.

8. The final composition of the Project Committee would be determined and a schedule of activities developed and approved by the Managing Director.

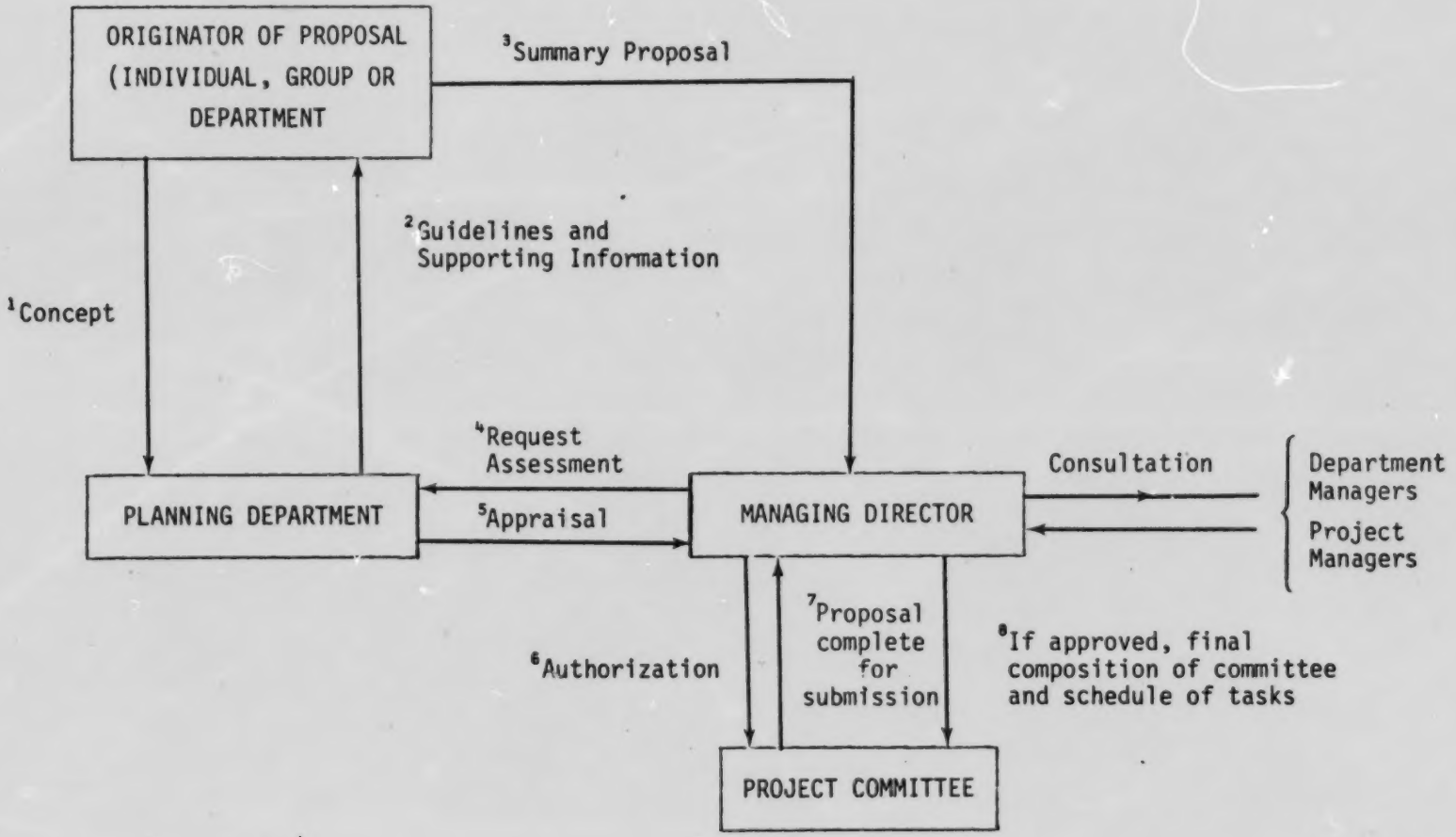


Fig. 2 Project Selection Steps

present arguments pro and con for each new proposal for the Director to review. If the concept is approved for development, then a group of people would be assigned to a Project Committee and given the task of preparing a detailed proposal. The Planning Department would assist with any information available from its own files, and might conduct supporting studies. The Department would provide an updated comparison of alternative proposals, and insure that each contains the information needed for making a choice.

In the section on management work load it is recommended that the position of Deputy for Programs be established. That individual would function as the head of a Project Control Committee and coordinate all the activities described here.

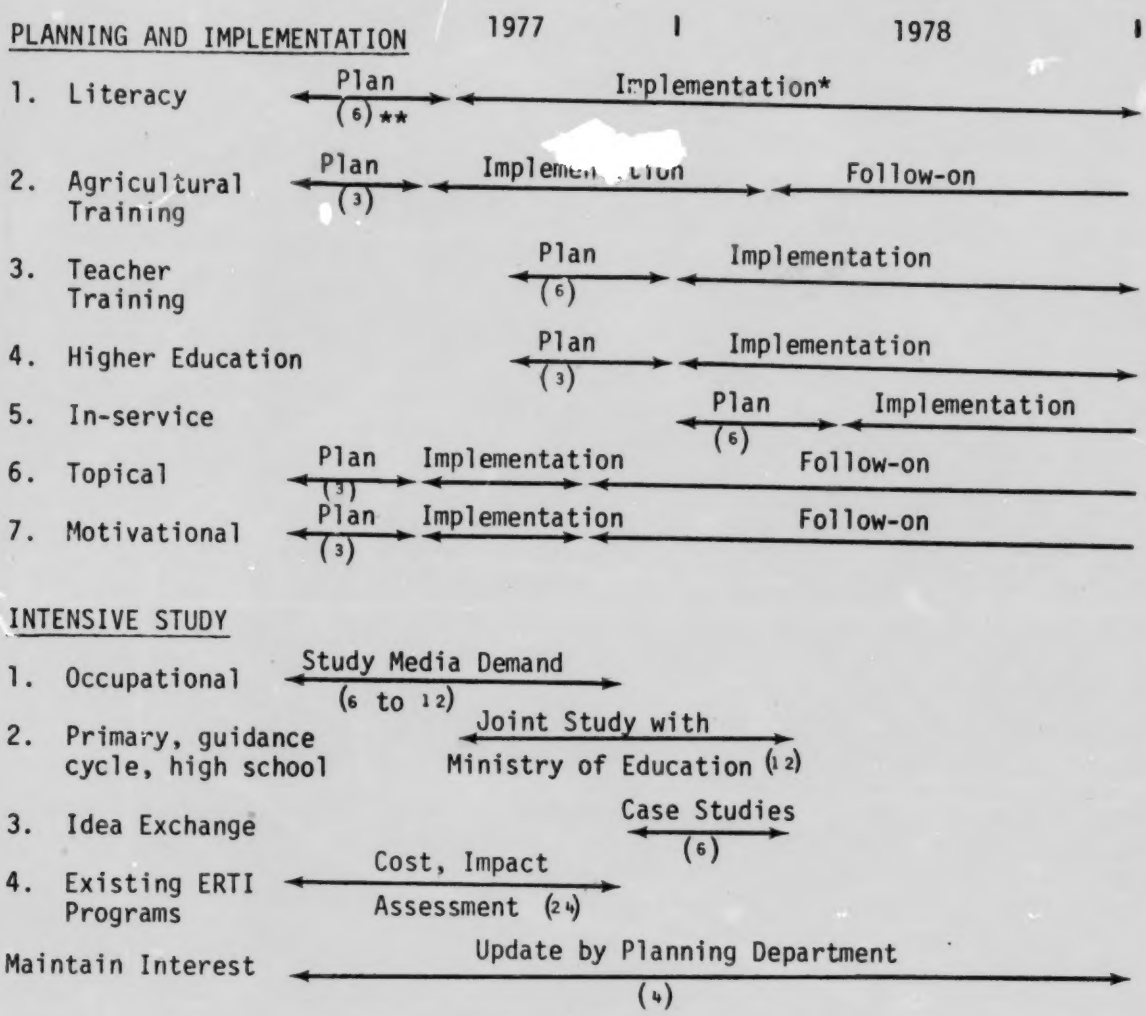
c. Information System

The key to controlling the selection and operation of projects is the availability of the right information:

- Departments and projects. The status of work, major problems and means of resolving them, and the availability of facilities and staff for new work should be reported on a monthly basis. For practical reasons, only changes have to be reported.
- Each project, existing and planned, must have a cost analysis and impact assessment (cost-benefit study). Proposals for new projects have to be compared on the basis of these factors plus required ERTI resources.
- A time schedule of project and department activities is needed. It would allow planning for the best time at which to change existing projects, expanding or reducing the level of activity, or adopting new projects.
- A personnel reporting system is already being prepared by the General Services Department. This will provide information primarily for setting salaries and incentives, but will be useful in assessing staff capabilities.
- A financial reporting system is presently being prepared by the General Services Department. This will show how well projects and departments are keeping to their budgets.

3. Recommended Schedule

Figure 3 shows a proposed schedule of project activities for ERTI. The information includes an estimate of the level of effort required. Even though tentative, information on schedule and the commitment of resources such as this can help the decision-making process.



*Implementation includes detailed planning, design, production, etc.

**Numbers in parentheses indicate level of effort in person-months

Fig. 3 Suggested Schedule

This or a similar chart should be maintained by the Planning Department.

APPENDIX
PROGRAM AREA ASSESSMENTS

Each of the program areas contained in Table 4 of the main text is examined in this appendix in terms of

- Iran's education or development needs
- the capabilities of other institutions concerned with the same program area
- possible ERTI role and activities
- the potential impact of the program
- the importance of ERTI's role
- ERTI resources required, and
- risk assessment

In addition, initial ERTI actions are suggested if anything is to be done in the area.

Some of the areas identified in Table 4 are combined in this assessment. One area, information programming in support of ERTI instructional programs, is not treated. It is a necessary activity in terms of successfully conducting the instructional programs. The entry is included in Table 4 as a reminder that it is a separate type of program.

A. GENERAL AUDIENCE

1. Cultural Programs

a. Iran's Needs

Right now there is apparently only general recognition of the need for cultural programming. The review of the Mashad Conference proceedings and papers, and the Arthur D. Little report showed that there is strong support for cultural programming. The goals listed in Table 2 of the main text shows the concern for culture and tradition.

Further definition of the needs should involve the following:

- Audience research to identify what interests people. NIRT's audience research group should be contacted.
- Government ministries and agencies should be contacted to assess what cultural activities would be appropriate.

b. Other Institutional Capabilities

The following capabilities are or could be important:

- NIRT networks produce and broadcast cultural programs
- The Ministry of Cultural Affairs may offer programs suitable for broadcast or non-broadcast media. The broadcast materials may be suitable for ERTI either because the networks cannot use all of it, or because there is a special educational component. The non-broadcast media may be suitable for distribution to schools, Learning Resource Centers or other institutions.
- Other sources of non-broadcast media have not been identified

c. Possible ERTI Roles and Activities

i. Support Role

ERTI might produce materials developed by the Ministry of Cultural Affairs or other institutions.

ii. Full Responsibility

ERTI might develop and produce its own materials. TV and radio programming produced in this manner would compete with those of the NIRT networks.

Competition is an unknown factor right now for the non-broadcast media. The uses of these media would be either directly by ERTI in its Learning Resource Centers, or in other institutions such as the schools, cultural houses, and community development group activities.

d. Potential Impact

- The potential impact would include:
- Increased appreciation of traditional Iranian culture
- A view of how that culture and its values can be applied in today's Iranian society.

The impact would be very long term and not easily measured. Pre and post surveys of the audience would be needed to determine if there is any effect.

One major issue is setting objectives for such programming in terms of how sophisticated it is. Less sophistication would attract more audience, but would ignore the value of preserving and advancing sophisticated cultural activities.

e. Importance of ERTI

ERTI can contribute another view towards the subject material. It may also fill a void in some areas. Until there is more precise definition of what might be done, no conclusions can be drawn.

f. ERTI Resources Required

Cultural programming would require extensive studio and crew time compared to the type of programming now being produced by ERTI. There are not enough studio crews to do quality cultural programs, nor are there people to do the visually oriented content research required. In five or ten years it may be possible for ERTI to begin this type of activity. Also, participants at the Mashad Conference felt that regional production would be important for successful cultural programs. If that is the case ERTI would have to arrange for the use of local NIRT facilities. That would place a severe strain on its staff.

A variation on the theme of cultural programming would involve teaching music, art and drama appreciation. This could involve fewer production resources but would require a great deal of research into effective teaching methods.

g. Risk Assessment

For general cultural programming the uncertain results to be obtained make it difficult to justify the major investment of ERTI resources needed. The teaching concept is a possibility, but it would be lower in priority than other instructional activities. The resources invested in cultural teaching could not be expected to have as great an impact as similar resources invested in other activities such as literary or agricultural programs.

h. Appropriate Action

After higher priority program areas have been developed, ERTI should explore public and government attitudes on the need for cultural programming beyond what the NIRT networks are doing.

2. Topical Programs

a. Iran's Needs

The development process raises many social, economic and environmental issues. The public should be aware of these issues and the various alternatives by which the private and public sectors could try to resolve them.

The Sixth Development Plan will be emphasizing social development with programs in areas such as welfare, health, education and housing receiving major attention. There will be a need for improved understanding on the part of the public of what these programs are intended to do and how the people can participate.

In addition to programs concerning the Sixth Plan, the following subject areas are of interest:

- Aims and progress of the 17 points of the White Revolution
- The importance of insurance and an assessment of what is available in Iran
- Participation of workers in business and industry
- The role of private firms in conserving natural resources
- Environmental problems and their resolution
- The state of education in Iran
- ERTI's activities

b. Other Institutional Capabilities

The NIRT networks could undertake broadcasting activities, and the ministries can develop and implement non-broadcast activities such as community workshops and the distribution of printed materials, slides, tapes, films and filmstrips.

c. Possible ERTI Roles and Activities

ERTI could take full responsibility or act in support of a ministry program. Both broadcast and non-broadcast activities could be important. The latter could include community workshops in Learning Resource Centers or the use of mobile vans to carry materials to the communities.

d. Potential Impact

The objective of topical issue activities would be to improve public awareness of the issues and the means of dealing with them, and increase participation by the public. Measurement would be difficult because there are so many other influences, but sophisticated evaluation instruments could be applied.

e. Importance of ERTI

ERTI may be able to contribute in areas not covered by the networks as far as broadcasting is concerned. In non-broadcast activities, ERTI could expect to find issue areas not covered by the ministries. In both cases, an organization able to contribute quality material could contribute significantly.

f. ERTI Resources Required

Broadcasting production would be less demanding than in cultural programming, but would most likely require more field work. Non-broadcast activities would probably require a level of effort similar to that needed for instructional non-media programs.

g. Risk Assessment

The success of this type of programming is difficult to measure, but the issues are considered to be very important by the government and there would be support for ERTI activities. Public support could also be expected. ERTI gives topical issues high priority.

h. Appropriate Action

A list of potential subject areas should be prepared in consultation with government agencies. Priorities should then be set by ERTI and a development schedule prepared. The independent producers should be involved, those responsible now for selecting and producing general programming.

3. Exchange of Ideas

These programs would link rural communities, sharing ideas and experiences. They might have a format of public discussions of issues and ideas, or demonstrate activities considered valuable by different

communities. Problems and successes with government programs could be reviewed.

The difference between cultural, topical and motivational programs, and programs dealing with an exchange of ideas is that the latter would place far more emphasis on local planning. The programs would be a vehicle for communities to learn more about each other and gain ideas on how to cope with their changing world. Government agencies could learn how better to cope with the problems of development, and people in turn could understand better the limitations and opportunities of how the government can help.

The major emphasis here is on rural communities. There is not as clear a need for urban areas.

a. Iran's Needs

The need for this type of program is not well-defined, but there is general acceptance of the idea based on the review of the Mashad Conference.

b. Other Institutional Capabilities

The NIRT local stations would be the most logical source of broadcast material. However, these stations do not have adequate planning and evaluation capabilities nor the experience of coordinating outside of the networks. Non-broadcast as well as broadcast programs could be handled through the Cultural House system, whichever ministry assumes responsibility under the recent reorganization of the government.

c. Possible ERTI Roles and Activities

ERTI could take full responsibility or act in support of ministry activities for non-broadcast programs. These activities could include

- Exchange of film, slides and tapes among Cultural Houses or Learning Resource Centers
- Exchange of materials by the use of mobile vans

An example of the use of mobile vans can be found in Brazil where MOBRAL (the national literacy organization) operates a number of vans called MOBRALTECA. These vans visit communities to help organize

cultural events and act as a library of both outside materials and materials obtained in the communities. The audio-visual materials obtained from the communities themselves become the major portion of materials carried.

In broadcast activities, ERTI could provide planning, evaluation and coordination support. The networks may or may not want to provide coordination support.

d. Potential Impact

The impact would be difficult to measure, but would include the spread of new ideas among communities, the growth of joint community projects and a reduction in negative attitudes of one community to another.

e. Importance of ERTI

The NIRT local stations can handle broadcasting, but ERTI could assist with planning, evaluation and coordination. ERTI would have an advantage in the non-broadcast media and the use of Learning Resource Centers or mobile units.

f. ERTI Resources Required

The Planning and Evaluation Department would have to carry a heavy work load. The Learning Resource Centers would have to be planned to include this type of activity. Mobile units would have to be designed, purchased and staffed.

g. Risk Assessment

The success of the few projects of this type identified so far (Brazil, Mali and Niger) is not well documented. These and other programs should be examined to determine better what results were obtained.

When there is a clearer idea on the results to be expected, how quickly they occur and how easy they are to verify, then other risk factors can be considered.

h. Appropriate Action

Two parallel steps might be undertaken:

- Identify and review experiences in developing nations. Determine how the results of such an activity might best be described and see if such results can be found.
- Explore with the appropriate ministries what activities would be of interest among rural communities.

Given an idea of what has succeeded elsewhere, plans could be prepared and assessed.

4. Motivational Programs

a. Iran's Needs

Public participation in development activities is essential if Iran is to achieve its goals. At the present there is no more specific definition of the need although participation rates in present efforts might be available from the responsible agencies.

b. Other Institutional Capabilities

The NIRT networks have the capability for this type of programming, but because of other commitments, cannot perform a continuous effort.

c. Possible ERTI Roles and Activities

ERTI could assume full responsibility for the development of programming. By assuming a neutral rather than advocacy role, it might enhance its credibility and the resulting motivational impact.

It would also be feasible for ERTI to concentrate on support activities for specific agency programs.

- The following activities might be part of the effort:
- Production and broadcasting of full length radio and TV programming, such as the voting instruction programs developed by NIRT News.
- Radio and TV spot announcements of the type prepared by ERTI in support of the literacy campaign.
- Production of film, slides, audio tapes for community use in workshops. The Learning Resource Centers and, if used, mobile vans might disseminate the materials.
- Development projects might incorporate the non-broadcast media into their introductory activities.

d. Potential Impact

There are two points to be made:

- The direct, desired impact is to increase participation in development projects.
- A side effect may develop if ERTI were to assume a neutral stance. In that case, the independent appraisals may force agencies to be more responsible in conducting programs.

e. Importance of ERTI

The organization may be able to better integrate with education and development projects. The major difference from the NIRT networks is that they are not in as good a position to maintain a continuous effort because of other commitments.

f. ERTI Resources Required

The nature of the material may require substantial field activity. More specific requirements cannot be given until particular types of projects can be identified.

g. Risk Assessment

The following points can be made:

- Regionalized production may play an important role in this type of material. In broadcasting, therefore, the NIRT networks and regional stations may have an advantage over ERTI. In addition the networks and regional stations could place this type of programming at a higher priority in order to have a continuous effort.

- It should be possible to set up projects to study the effects of motivational programs. In general use it may not be possible to separate out the role of ERTI's materials in motivating people because there are usually so many factors operating.

- The success and credibility of motivational programming will depend eventually on the effectiveness of the development and education programs being supported. Care should be taken in selecting which programs would receive support. Or, a neutral stance involving independent appraisal might be assumed. However, ERTI's support from development agencies might be increased by assuming an advocacy role.

At the present time, ERTI places high priority on motivational programs. General support could be expected from the government and the resource commitment is reasonable.

h. Appropriate Action

A non-committal survey of agencies should be made to determine actual motivational needs. Then, given the resources needed to develop a program, priorities should be set on subject areas and a timetable for development prepared.

5. Preschool Programs

a. Iran's Needs

A number of arguments could be raised on the need of preschool programs for children in Iran. They might help prepare children for school, acquaint them with modern life and portray how to deal with their level of social situations. However, when there are serious deficiencies in the formal school system and major development activities underway, justification of preschool programs requires a clearer description of needs than exists now.

b. Other Institutional Capabilities

The NIRT networks have some programming but not the same calibre as Sesame Street. Books and games and other non-broadcast programs are not adequately developed by other institutions.

c. Possible ERTI Roles and Activities

ERTI should be able to assume full responsibility for the development and implementation of programs including both broadcast and non-broadcast and Learning Resource Center and mobile van activities.

Another possibility is that the Ministry of Education could assume responsibility for the content design.

Finally, ERTI might provide research and production support to the network.

d. Potential Impact

Hopefully, such programming would improve the attitudes, behavior and knowledge of children. Just how this would occur is not clear. Sesame Street in the United States was based on extensive study and planning. A similar effort would be required in Iran if significant results are desired.

e. Importance of ERTI

The NIRT networks could certainly produce this type of programming. ERTI, however, might be better prepared to sponsor the educational and psychological planning. If the networks want to do it, ERTI management feels that they should. ERTI might still provide research and production support but not take program responsibility.

ERTI could play an important role in non-broadcast media and the use of Learning Resource Centers and mobile units.

f. ERTI Resources Required

Broadcast programming on the order of Sesame Street could absorb enormous resources compared to ERTI's present capabilities. Elaborate studio production and special effects would tie up both facilities and people. Even some non-broadcast media production might require large resources before a significant impact can be achieved. Also, less sophisticated programming than Sesame Street might achieve important results and should be examined. ERTI's limited efforts in books and games should be examined for possible expansion and the resources to do that determined.

The in-depth educational and psychological studies needed to prepare an effective program of activities would probably have to be contracted out until ERTI could build its own staff or delayed until the research people could be hired.

Finally, it may be necessary to modify the program for different cultural and social settings throughout the country. This could increase production requirements significantly.

g. Risk Assessment

A great deal of resources might be committed with little significant impact. For ERTI, the following considerations should be taken into account:

- The planning effort is itself so large that a substantial pre-planning activity should develop justification before a major commitment is made. Once made, specialists would have to be hired to develop a program.
- It may be desirable to work in support of the Ministry of Education to reduce ERTI's liability. Of course this would also reduce ERTI's opportunity for a good reputation.
- The networks may want to assume the responsibility. If they do ERTI would not object, so the uncertainty lies in the networks' intentions.

h. Appropriate Action

ERTI could begin a long-term exploration of the possibilities with the Ministry of Education and individual experts in the fields of education and psychology. NIRT network desires should be determined. If they are going to undertake the effort, ERTI would not, except for support activities as mentioned earlier. Once an idea is formed of the scope and structure of potential programs, including both broadcast and non-broadcast, plans could be prepared for review by ERTI management. More immediate action might be taken by expanding ERTI's books and games program. An evaluation should be made of that program to assess its potential.

B. INFORMATIONAL SERVICES

1. Service Support Information

The information activities in support of social and sectoral services are seen as a follow-up to motivational programs and would be included as part of those activities.

2. Public Education

The programs considered here would be similar in content to elements of literacy training, basic education and rural and urban skill training. The difference is that they would not be organized for instruction and the use of classes and mentors. They would be intended for a large audience.

a. Iran's Needs

There is a generally recognized need for programs on health care, nutrition, personal finances and similar topics. However, there is no available information specifying the subjects that might attract an audience. A survey of the potential audience and of the agencies concerned with these problems could help pinpoint topics for programs, the degree of regionalization needed and the desirability of support materials such as books.

b. Other Institutional Capabilities

The NIRT networks could produce and broadcast public education programs. Other agencies must have capabilities for conducting workshops and providing support materials.

c. Possible ERTI Roles and Activities

ERTI should have a choice of assuming full responsibility for a program, including the non-broadcast materials, or of acting in support of existing agency activities. Books and pamphlets might play an important function and become a major effort by ERTI. This would be true if there is limited capability on the part of the agencies to produce printed material. ERTI could be in a position to respond efficiently especially if it is involved in the subjects because of other program activities.

d. Potential Impact

The desired impact is to have people change their practices in regard to health care and the other topics. No estimates are readily available on what the results might be. A well-designed evaluation would be desirable to determine the effect of such programs. It will be important to establish clear criteria for a "successful" effort.

e. Importance of ERTI

ERTI may or may not offer any advantages over the NIRT networks for TV and radio programming. That can be checked by assessing their capabilities now and their plans for the future.

As indicated earlier, ERTI may offer unique capabilities because of its knowledge of non-broadcast media. In addition ERTI may get involved in the topics through other program work such as literacy, basic education and agricultural training. The public education activity could then be a spin-off.

f. ERTI Resources Required

The demands on studio production would be similar to current programming except for the possibility of more field work.

A great emphasis on printed material would require additional staffing and possibly facilities.

g. Risk Assessment

With no solid information on the amount of programming or non-broadcast media, the topics to be covered, the nature of the audience and the criteria of success, it is difficult to assess this likelihood of failure.

h. Appropriate Action

Audience and agency surveys should be conducted to determine what subject areas are not adequately served by other agencies. Once potential programs are identified they can be studied and a decision made on what would be developed, if anything.

C. INSTRUCTIONAL SERVICES

1. Adult Literacy

The National World Literacy Campaign (NWLC) is beginning a major effort to reduce illiteracy to 15% by 1988. The effort entails far more than just the ability to read and manipulate numbers. An important feature of NWLC is the attempt to prepare people for a full life, people capable of functioning in the society as individuals, and able to have satisfying employment opportunities.

In order to achieve this, the NWLC has devised a program which will first satisfy basic educational requirements in language and mathematics. Then a lifelong permanent education system is proposed which will provide vocational and technical training, primary school equivalency and general adult education. Wherever possible, the program is designed to enable successful students to enter the existing education system. Table A-1 describes the various components of the effort.

a. Needs

Literacy needs in Iran are well documented. Presently there are about 10 million illiterates in the age group seven to forty-four. If the 15% literacy rate goal is to be achieved by 1987, then large enrollments are necessary. Table A-2 lists a possible sequence of enrollments for "two-cycle" and "one-cycle" literacy courses. The two-cycle course is the existing (1975) system. The one-cycle course is assumed to last five to six months.

Annex III to Ref. 4 describes the various components of the NWLC effort. There is not an exact correspondence to the two-cycle or one-cycle courses of Table A-2. Also, the projections of Table A-2 are made from 1353 and do not reflect the latest data. However, the numbers show the order of magnitude of the enrollments needed to achieve a successful literacy program.

Table A-1

Program Components: National World Literacy Campaign
(from Ref. 4)

1. Basic Program

   (a) Primary School Equivalence Course designed for children between 7-10 years of age and aiming at their eventual inclusion into the formal educational system, integration into the social and economic life of the community especially after participation in follow-up courses.

   (b) Prevocational Training Literacy Courses for adolescents in the 11-14 years age group aiming at providing them with technical and socio-economic orientation, acquisition of practical skills enabling integration into industrial and agricultural production as well as with basic political and cultural orientation.

   (c) Adult Mass Literacy Course for illiterate adolescents and adults of both sexes in the age group between 12-50 years especially in the zones not directly affected by concrete socio-economic development projects as well as in all zones where the spoken dialect largely differs from Farsi. The content should pertain to concrete life problems common to both sexes as well as to urban or rural milieu.

   (d) Work Oriented Functional Literacy Programmes designed for illiterate adults of both sexes in the age group between 15-50, especially in the zones with concrete socio-economic development projects in agricultural areas, in all industrial enterprises and in zones of special health and hygiene hazards. These programmes aim at integration of literacy, technical, socio-economic, simple science and skills components.

   (e) Radio Literacy Programme at present to be oriented towards illiterate adult women in the age group 15-50 years of age, especially in rural areas. The programme has to be carried out with the help of monitors in all localities where the participants will be found.

   (f) Tribal Literacy and Basic Education for the illiterate population of the tribes existing or newly conceived programmes will be used respecting the positive experiences gained in this respect in Iran.

2. Proposed Advanced Program

   (g) Technical Minimum Courses for literate or newly literate adolescents and adults engaged in the production process or in the services who aspire for the promotion of their technical and professional knowledge and skills. They will be diversified according to the nature of individual needs and interest with respect to the needs of the respective economic sector.

Program Components: National World Literacy Campaign (cont'd)

(h) Winter Agrotechnical Courses for which the target population will be literate or newly literate adolescents and adults engaged in the agricultural work aspiring to the promotion of their technical knowledge and skills.

(i) Free Interest Vocational Courses for literate or newly literate men and women in urban or rural zones aspiring to improve the family income or to enter in the production or services sector.

(j) Complementary Adult Primary School Course with the purpose to provide the participants with the primary school certificate.

(k) Evening Formal Education Courses in which the participants from the basic and follow-up courses will have an opportunity to participate in the evening formal education courses organized by the Ministry of Education. Probably a sandwich preparatory course for the successful participants from literacy courses should be introduced.

Table A-2

Target Literacy Enrollments
(from Table IV, Ref. 5)

Year	Target Enrollments (thousands)	
	Two Cycles*	One Cycle**
1353	693	462
1354	847	565
1355	1028	689
1356	1225	816
1357	1450	967
1358	1636	1090
1359	1910	1273
1360	2220	1480
1361	2135	1423
1362***	1423	948
1363	1637	1092
1364	1893	1262
1365	2178	1452
1366	2497	1665
1367	983	665

---

* Assumes that 40% of those originally enrolled complete both cycles.

** Assumes a 60% completion rate.

*** From 1362 to 1367 only females are enrolled. Male literacy is achieved with the 1361 enrollments.

b. Other Institutional Capabilities

Table A-3 lists the institutional responsibilities for the various components of the NWLC.

c. Possible ERTI Roles and Activities

ERTI might find a support role for both broadcast and non-broadcast media and Learning Resource Center activities in any of the component programs. Mobile units might be used in some components. In addition, ERTI might have primary responsibilities in the "Free Interest Vocational Component."

Based on the results of the Lahore, Pakistan literacy project using television, ERTI should place major consideration on the use of broadcast television as a means of contributing to the basic program for adults. The results from Lahore are discussed in Section 5, "Importance of ERTI."

There is no direct evidence that TV can help with the 7-10 and 11-14 age groups. If no direct evidence of successful use of TV can be found ERTI may want to propose an experiment.

Non-broadcast media may play an important function, particularly in areas without TV coverage. Located in Learning Resource Centers or mobile units, they might provide significant support to the various components.

As noted in Table A-3, NIRT is the responsible agency for the Radio Literacy component. ERTI should clarify whether it or the networks are responsible or if no decision has been reached. In the latter case ERTI should consider negotiating to obtain responsibility.

Finally, there is a need to provide motivation and support material to maintain and improve skills learned from the instructional program. In particular, the NWLC is interested in the development of radio clubs to carry out this role.

d. Potential Impact

The NWLC hopes to reduce the illiteracy rate to 15% by 1988. In addition, it hopes to provide:

- sufficient general education to equip people to function effectively in their society, and

Table A-3

NWLC Institutional Responsibilities
(from Ref. 4, Annex IV)

Component	Age	Sex	Sector or Area	Institution
A. Basic Program				
1. Primary school equivalence	7-10	M/F	Urban and Rural	Ministry of Education
2. Prevocational training (begins in third year)	11-14	M/F	Urban and Rural	Not specified, but probably the Minisry of Education
3. General functional literacy				Ministry of Education initially with responsibility eventually to local committees; also possibly the Ministry of War
a. Rural men	15-50	M	Rural	
b. Rural women	15-50	F	Rural	
c. Urban	15-50	M/F	Urban	
4. Work-oriented literacy	15-50	M/F	Urban and Rural	All economic and technical agencies plus the Iran Women's Organization
5. Radio literacy	15-50	F	Rural	NIRT
B. Proposed Advanced Program (begin experiments in September 1977)				
1. Technical minimum	15-50	Mainly M	Industry services	Ministry of Labor and Social Affairs
2. Winter agrotechnical	15-50	Mainly M	Agriculture	Ministry of Agriculture
3. Free interest vocational	15-50	Mainly M	Urban and Rural	All economic and technical agencies and the Iran Women's Organization
4. Complementary adult primary	15-50	M/F	Urban and Rural	Ministry of Education

Table A-3 (cont)

NWLC Institutional Responsibilities (cont'd)

	Component	Age	Sex	Sector or Area	Institution
5.	Industrial Training Board and Agricultural Training Board	15-50	Mainly M	Not Specified	Industrial Training Board and Agricultural Training Board
6.	Evening formal education	---- not specified ----			Ministry of Education

- develop specific vocational, technical and functional living skills.

e. Importance of ERTI

This section focuses on the use of television with adults. Information has to be obtained on the effectiveness of radio and non-broadcast media in literacy training at all age levels and the use of TV with children.

With TV there is evidence, although limited, that the following benefits are obtained in adult literacy programs:

- The student-teacher ratio can be doubled or tripled. In the Lahore project, the best student-teacher ratio with TV was found to be 30:1. For conventional training using the same materials, the best ratio is 10:1 (Ref. 6).

- With the TV carrying the sophisticated lecture, a short training period is sufficient for the class instructors. In the Lahore project, only 30 hours of training is required for instructors in the TV system. Conventional training lasts a number of weeks.

For Iran, the change in the student-teacher ratio can have a significant impact on the program. For example, with 1,000,000 students enrolled, an increase in the student-teacher ratio from 10:1 to 30:1 reduces the number of instructors from 100,000 to 33,000.

This change plus reduced training time for the instructors also reduces the resources needed for training. If the conventional training of instructors were to take three times as long as the training to teach with TV, the conventional training would require nine times the level of effort as does trainng for the TV-based program.

In addition to increasing efficiency in terms of staffing, the use of TV in Lahore has continued the high performance of the conventional literacy program upon which it was based. A sample of 65 community viewing centers in Lahore showed the following results:

Drop-out rate: 15% (of peak enrollment)

Passed literacy test: 72%

It is also important to note that the Pakistani language, Urdu, is very close to Farsi. Therefore similar results might be expected.

ERTI might play a very important role in the development of radio clubs. The content of the broadcasts would have to be related to the students' achievement level. This would allow ERTI to develop its capabilities based on the educational designs used by the NWLC. In addition, ERTI could help with printed support materials and the use of its Learning Resource Centers.

f. ERTI Resources Required

Production estimates would be needed for each component of the NWLC program. The Lahore project had 156 lessons, each using a half hour of TV for a total of 78 hours. Involvement in all components might multiply this by a factor of 10 or more.

g. Risk Assessment

The following points should be made:

- Broadcasting apparently has been accepted for the Radio literacy component. The value of radio has been firmly established.
- The Lahore project has demonstrated the value of TV for adult students. However, its success rate of 72% exceeds what has been achieved in Iran. Mass literacy programs in Iran have achieved success rates of 20-50%. It would be important to learn if there are any unusual circumstances in Lahore contributing to the success of the program that would not exist in Iran.
- The usefulness of TV for children has not been proven. ERTI could propose an experiment.
- The effectiveness of non-broadcast media is not well defined.
- The low success rates previously occurring in Iran indicate a need to judge what the NWLC materials and approach will achieve. If prospects appear low, ERTI may not want to get involved or delay involvement until initial results can be seen.
- ERTI may not have the resources now for a major effort in literacy. However, early participation would be important for contributing to the design of programs.

h. Appropriate Steps

The following steps would clarify ERTI's possible role and hopes of success:

- Review with the NWLC staff how they would be interested in having ERTI play a support role or assume responsibility for a component. Emphasize the areas of adult training as most appropriate for TV.
- Clarify who in NIRT is to do the Radio Literacy effort and whether or not ERTI could participate.
- Conduct a survey of literacy activities to assess better what is known about the use of the various media other than TV for adults. This might be obtained from the International Institute for Adult Literacy Methods in Tehran.

2. Basic Education

The program of interest here would provide basic education for children and youth who do not have access to formal schools. In the discussion of Adult Literacy, it was pointed out that information pertinent to the effectiveness of media is available right now only for the use of TV with adults. Before an appropriate role can be determined for ERTI, information on the use of various media with children and youth in non-formal education must be obtained.

Since the NWLC is intending to provide basic education to children and youth, ERTI should explore what its role might be with NWLC. Specific concerns not already covered in the section Adult Literacy are as follows:

- The need at the age levels 7-14 should be specified in in terms of how many need the non-formal program and where they are located. Data available from Refs. 8, 9 and 10 indicate that there could be on the order of one and a half million or more children out of school but the sources are not well documented.
- The best use of media with children and youth in non-formal education is not known. An effort should be made to determine if there is enough information to decide on the best mix of materials aimed directly to the children and to the local instructor. If there is not enough information, ERTI might propose experiments.
- ERTI is already involved with high school vocational education TV programs. These might be extended to satisfy basic education needs.
- Any activity in this area is contingent on the development of a basic national policy towards meeting the

needs of the out-of-school group. ERTI should develop a document which can be used to negotiate the policy with the Ministry of Education and other concerned ministries.

3. Rural Development Skills

The skills of interest here concern daily problems faced by rural people, such as home maintenance, food storage and protection, credit and finance, and health care. Basic information on these subjects will be provided through the NWLC program. However, there would appear to be room to go beyond the NWLC, covering more subjects, perhaps in greater depth.

a. Iran's Needs

The need for programs of this nature is generally recognized. However, the need is not well defined in terms of the priority of different subjects, the solutions to problems that fit the capabilities, materials or style of different regions, and the interests of people.

b. Other Institutional Capabilities

The following have related activities and might be the appropriate source for determining program content:

- Free University of Iran (FUI)
- Ministry of Labor
- Ministry of Health and Welfare
- Ministry of Agriculture
- NWLC

c. Possible ERTI Roles and Activities

With no information on the various Ministry activities and the FUI program not defined, there is no way of indicating a specific role for ERTI. Therefore, ERTI might undertake programs involving full responsibility or only a support role. Any of the media, broadcast or non-broadcast could be used.

An important issue to be resolved is under what conditions the programs, particularly those using broadcast media, should be designed directly for the user, and whether they should be aimed at mentors or community development agents.

d. Potential Impact

No estimates are available of the potential impact. The desired impact in general is for an increase in individual or community development projects and behavioral, attitude and knowledge changes on the part of the people.

e. Importance of ERTI

The broadcast media and the use of non-broadcast media in Learning Resource Centers and mobile units are special capabilities of ERTI. The content knowledge can be expected to reside with the agencies already involved in rural development.

f. ERTI Resources Required

This is an open-ended type of program. For given amounts of programming, the amount of production resources would probably be similar to ERTI's existing procedures. More field activities would be required.

g. Risk Assessment

It is difficult to project the expected impact. With so little known about experiences in other countries little can be said about the chance of success.

h. Appropriate Actions

The following actions are suggested:

- Review with the agencies listed above what needs are seen and the potential role of ERTI.
- Identify and examine experiences in other countries, such as the radio projects in Dahomey, Mali and Niger (Ref. 11).
- Prepare a plan for possible ERTI activities.

4. Urban Development Skills

The concept is similar to that of Rural Development Skills except that the target would be the urban poor and recent arrivals from rural areas. The problems and their solutions would change, although some of the basic attitude or knowledge problems, e.g., nutrition, might remain the same.

ERTI should identify the agencies concerned with these problems and determine what its role might be.

5. Occupational Training

a. Iran's Needs

A general description of Iran's needs is found in Chapter 2 of Ref. 9. The major findings concerning occupational demands are summarized in Tables A-4 and A-5. A more detailed analysis of Iran's economy produced the results shown in Tables A-6, A-7 and A-8 (Ref. 12). While the results given here of Ref. 2 have been updated by new Plan and Budget Organization data, the conclusions remain unchanged.

All of these tables show that large numbers of skilled manpower have to be trained. As Table A-5 shows, however, there are a large number of individual skills required. Many of these would require only a short training period. The conclusion of the study reported in Ref. 9 is that market demand for these short-training-period skills is subject to fluctuation.

Therefore, rather than having major government programs in specific skills it would be better to let business, industry and government meet their needs with in-house training. An alternative is to maintain a flexible training operation able to shift emphasis as the market changes. The source of trainees should be people finishing their formal schooling.

b. Other Institutional Capabilities

In terms of content, the following institutions would be expected to have useful programs:

- Ministry of Education. Vocational and technical training schools, vocational and technical training in the high schools
- Ministry of Labor and Social Affairs training programs
- Commercial and industrial in-house training
- Government agency in-house training
- Military training
- Proprietary schools

Some may have non-broadcast media capabilities in film, slide and tape.

The Free University of Iran is developing vocational courses beginning with paramedic training. ERTI is already working in support of Free University of Iran teacher training and the paramedic programs.

Table A-4 (from Ref. 9)

Annual Entry Rate Estimates of Workers into Seven Occupational Categories Needed to Reach Economic Development Goals

Workers/year

	Annual Even Maintenance Level 1356	Annual Rate for Growth 1356-1371	Annual Even Maintenance Level 1371
1. Professional, Technical and Related	17,700	73,200	45,100
2. Administrative and Management	1,140	40,700	16,400
3. Clerical and Related	8,100	153,300	65,600
4. Sales	22,000	39,500	36,900
5. Services	28,600	55,000	49,200
6. Agriculture, Animal Husbandry, Forestry, Fishing, Hunting	89,000	———	45,100
7. Production, Transport Operators, Laborers	97,000	145,400	151,700

Table A-5 (from Ref. 9)

Projections of Employees in Professional, Technical, Administrative, and Managerial Occupations

Detailed Occupation / Year	Employees (thousands		
	1345	1356	1371
Physical Scientists and Related Technicians	0.4	1.3	3.4
Architects, Engineers, Related Techs.	13.0	46.0	120.0
Aircraft and Ships' Officers	0.6	2.0	5.0
Life Scientists and Related Techs.	0.5	2.0	5.0
Medical, Dental, Veterinary, Nursing, and Related Technicians	34.0	119.0	308.0
Statisticians, Mathematicians, Systems Analysis, and Related Technicians	0.3	1.0	3.0
Economists	0.1	0.3	0.1
Accountants	8.0	27.0	70.0
Jurists	5.0	17.0	45.0
Teachers	113.0	392.0	(1016.0)*
Workers in Religion	12.0	43.0	112.0
Authors, Journalists, Related Writers	0.8	3.0	8.0
Sculptors, Painters, Photographers, and Related Arts	6.0	20.0	52.0
Composers and Performing Artists	4.0	14.0	37.0
Athletes and Sportsmen, and Related	0.8	3.0	7.0
Other Professional & Technical N.E.C.	4.0	13.0	32.0
Legislative Officials & Government	2.0	8.0	109.0
Managers	10.0	38.0	548.0
Office Supervisors	9.0	35.0	504.0

* The teacher estimate in 1371 is too high.

Table A-5 (cont.)

Projections of Employees in Clerical
and Related, Sales, Service

Detailed Occupation \ Year	Employees (thousands)		
	1345	1356	1371
Recording Correspondence & Filing Clerks	98	158	1276
Accounting and Computing Clerks	64	103	825
Stock Clerks and Material and Production Plan	10	17	132
Transport and Communications Supervisors	2	4	31
Transport Conductors	1	2	15
Mail Distribution Clerks	7	11	91
Telephone and Telegraph Operators	9	14	111
Clerical and Related Workers N.E.C.	1	2	15
Working Proprietors (wholesale & retail)	307	535	921
Sales Supervisors and Buyers	3	4	8
Sales Engrs.,Commercial Travelers and Mf. Agt.	0.2	0.4	0.7
Insur., Real Est., Sec. & Bus. Serv., Sales, Auction.	21	37	63
Salesmen, Shop Assts. & Rel	173	303	520
Sales Workers N.E.C.	0.9	2	3
Working Proprietors (Catering & Lodging)	29	65	1153
Housekeeping and Related Serv Workers	196	439	785
Building Care, Charworkers, Cleaners	93	206	370
Launders, Dry Cleaners, Pressers	16	36	64
Hairdressers, Barbers, Beauticians	60	133	238
Undertakers, Embalmers	0.3	0.6	1
Protective Service Workers	82	184	329
Service Workers N.E.C.	35	78	140

Table A-5 (cont.)

Projections of Employees in Agriculture, Production, etc.

Detailed Occupation \ Year	Employees (thousands) 1345	1356	1371
Agricultural and Animal Husbandry Wkrs	3119	3550	1809
Forestry Workers	2	3	1
Fisherman, Hunters, Related	16	19	10
Miners, Quarrymen & Mineral Treaters	15	28	45
Well Drillers, Borers and Related	2	5	7
Metal Processers	7	14	22
Wood Preparation Workers & Papermakers	2	2	5
Chemical Processers and Related	9	18	28
Spinners, Weavers, Knitters, & Dyers	592	1133	1777
Tanners, Fellmongers, Pelt Dressers	4	7	11
Food and Beverage Processers	96	184	288
Tobacco Preparers & Product Makers	1	2	3
Tailors, Dressmakers, Sewers, Upholsters	90	172	270
Shoemakers & Leather Goods	54	104	163
Cabinet Makers and Wood Workers	11	21	33
Stone Cutters & Carvers	9	16	26
Blacksmiths, Toolmakers & Machine Tool Operators	42	81	127
Machinery Fitters, Assemblers & Precision Instrumenters	6	11	17
Machine Repairmen and Related	49	93	146
Electrical Fitters and Related	19	36	56
Broadcast Station Operators & Projectionists	0.5	1	2
Plumbers, Welders, Sheet Metal & Structural Metal Erectors	30	55	86

Table A-5 (cont.)

Detailed Occupation / Year	Employees (thousands)		
	1345	1356	1371
Jewellery & Precious Metal Workers	5	10	16
Glass Formers, Potters & Related	17	32	50
Rubber & Plastics Product Makers	4	7	11
Printers & Related Workers	6	11	18
Painters	18	34	53
Production & Related Workers N.E.C.	26	50	78
Bricklayers, Carpenters & Const. Workers	204	391	612
Stationary Engines & Related Equip Wkrs	11	129	201
Material Handling & Equip Operators Dock Freight	5	9	13
Transport Equipment Operators	183	349	548
Packers Labelers & Laborers N.E.C.	518	991	1554
Workers Not Classified by Occupation	257	492	772
Total	6,861.4	11,178.6	18,935.1

Table A-6 (from Ref. 12)

PROJECTED OCCUPATION OF EMPLOYED LABOR FORCE BY SECTOR IN 1982 COMPARED TO ESTIMATED SITUATION IN 1972

A. Estimated Situation, 1972

Occupation / Sector	Professional, Technical & Related	Managers & Administrators	Clerical Workers	Sales Workers	Service Workers	Agricultural Workers	Miners & Quarrymen	Transport Equipment Operators & Related	Industrial and Production	TOTAL
Agriculture, Forestry, & Related	494	330	3,856	182	3,986	3,629,563	---	---	15,428	3,653,839
Mining and Manufacturing	17,037	7,391	40,460	28,505	58,626	4,173	9,056	58,672	1,660,916	1,884,836
Oil	3,000	2,000	6,500	1,000	1,000	---	1,000	7,000	28,000	49,500
Construction	10,103	2,106	11,915	1,007	4,298	903	---	21,289	657,985	709,606
Electricity & Utilities	8,185	---	24,595	1,118	11,120	170	---	3,998	31,312	80,498
Commerce, Trade	13,785	709	52,250	670,360	13,345	446	---	31,561	7,392	789,848
Transport, etc.	5,469	3,694	51,882	2,325	17,127	1,203	---	251,523	106,599	439,822
Services	359,519	6,577	283,322	4,693	654,530	44,957	---	30,198	126,291	1,510,087
Activities not Adequately Described	1,492	270	4,174	449	3,244	539	---	---	6,145	16,313
TOTAL	419,084	23,077	478,954	709,639	767,276	3,681,954	10,056	404,241	2,640,068	≈ 9,134,429

Source: Based on proportions from Iran's Labor Statistics Book: 1972, but totals agree with those in Economic Statistics & Trends of Iran, Sept., 1975, since the latter totals are assumed to be more accurate and were used earlier. (Oil breakdown estimated.)

NOTES: (---) implies low enough to be "not recorded." There is a slight discrepancy in totals; see write up.

B. Projected Requirements in 1982

Occupation / Sector	Professional, Technical & Related	Managers & Administrators	Clerical Workers	Sales Workers	Service Workers	Agricultural Workers	Miners & Quarrymen	Transport Equipment Operators & Related	Industrial and Production	TOTAL
Agriculture, Forestry, & Related	32,890	---	---	---	---	3,091,660	---	32,890	65,780	3,289,000
Mining and Manufacturing	350,630	250,450	601,080	150,270	100,180	---	100,180	200,360	3,255,850	5,009,000
Oil	3,480	2,320	7,540	1,160	1,160	---	1,160	2,900	38,280	58,000
Construction	85,200	187,440	68,160	---	17,040	---	---	68,160	1,260,960	1,704,000
Electricity & Utilities	15,570	8,650	32,870	1,730	3,460	---	---	12,110	95,150	173,000
Commerce, Trade	25,760	51,520	193,200	772,800	77,280	---	---	51,520	115,920	1,288,000
Transport, etc.	24,420	48,840	170,940	8,140	24,420	---	---	333,740	195,360	814,000
Services	812,130	147,660	369,150	24,610	787,520	24,610	---	49,220	270,710	2,461,000
Activities not Adequately Described	1,492	270	4,174	449	3,244	539	---	---	6,145	16,313
TOTAL	1,351,572	697,150	1,447,114	959,159	1,014,304	3,116,809	101,340	750,900	5,304,155	14,796,000*

Source: Column (9), Table I multiplied by coefficients in Table 2; Not Adequately Specified workers of 1972 transferred without change in 1982.

* 14,796,000 is total from Table I; the total row and column do not add exactly to it due to rounding error (can be corrected as data improves

Table A-7

EDUCATIONAL LEVELS OR FRACTION OF PEOPLE ACTIVE IN EACH OCCUPATION IN 1972
AND PROJECTED NUMBERS OF EDUCATED PEOPLE REQUIRED TO ATTAIN IDENTICAL PROPORTIONS IN 1980

A. Percent Distribution by Educational Level in Each Occupation: 1972[1]

Education / Occupation	Higher Education (4 yrs.+)	Secondary (H.S. &/or 1-2 years College)	Elementary	Illiterate or Read Only
Professional, Technical & Related	.35 (.45)	.48 (.45)	.15 (.10)	.02 (---)
Managers & Administrators	.18 (.20)	.46 (.51)	.31 (.29)	.05 (---)
Clerical & Related	.04 (.05)	.54 (.67)	.40 (.28)	.02 (---)
Sales	--- (.05)	.15 (.45)	.60 (.50)	.25 (---)
Service	--- (.02)	.10 (.26)	.55 (.72)	.35 (---)
Agriculture	--- (.02)	.05 (.21)	.40 (.77)	.55 (---)
Mining and Production	--- (.01)	.05 (.29)	.50 (.70)	.45 (---)
Transport, etc.	NAD (.01)	NAS (.33)	NAD (.66)	NAD (---)
Not classified by Occupation	.03 (NR)	.18 (NR)	.34 (NR)	.45 (NAD)

NOTE: 1) 1972 data for Iran not available. Table is derived from Iran 1966 data (Statistical Yearbook, 1966, Statistical Center of Iran, Table No. 33, p.110) and international comparison for educational structures in countries with similar productivity and occupational mix growth rates. (Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, OECD, Paris, 1973)
2) (---) = less than .009
3) (.xx) entries represent target values for 1982; international comparison
4) NR = Not Relevant; NAD = Not Available Data

B. Projected Numbers Required in 1982 to Maintain Target Proportions

Professional, Technical & Related	608,207	608,207	135,157	---
Managers & Administrators	180,646	460,647	261,937	---
Clerical & Related	74,931	1,004,084	419,617	---
Sales	27,994	251,946	279,936	---
Service	21,832	283,812	785,940	---
Agriculture	62,336	654,530	2,399,942	---
Mining & Production	54,570	1,582,534	3,819,910	---
Transport, etc.	7,509	247,797	495,594	---
Not classified by Occupation	489	3,588	12,234	---
TOTAL	1,038,514	5,097,145	8,610,267	---

Source: 1982 Totals from Table 3 times fractions from Part A, above.

NOTES: 1) Not classified by Occupation approximated in the transfer only.
2) Again, total work force doesn't exactly equal that from Table 3, due to rounding.
3) These numbers could vary depending on assumptions on classification and cut-off for the education level. (Most countries do it differently.)

Table A-8 (from Ref. 12)

PROJECTED GROWTH OF EMPLOYED LABOR FORCE BY OCCUPATION; LEVEL OF EDUCATION

A. Growth in Numbers Required in Each Occupation (approximate)

	Number in 1972	Number in 1982	Approx. Annual Growth Rate 1972-1982	Total Number Added	Average Annual Increase
Professional, Technical, & Related	419,084	1,351,572	12%	932,488	93,249
Managers & Administrators	23,077	697,150	38%	674,073	67,407
Clerical & Related	478,954	1,447,114	13%	968,160	96,816
Sales	709,639	959,159	3%	249,520	24,952
Service	767,276	1,014,304	3%	244,028	24,403
Agriculture	3,681,954	3,116,809	-1%	(565,145)	(56,515)
Mining and Production	2,660,124	5,405,495	6%	2,745,371	274,537
Transport, etc.	399,241	750,900	7%	351,659	35,166
TOTAL	≈ 9,134,429	≈ 14,796,000	5%	5,600,154	560,015

B. Growth in Numbers Required at Each Level of Education to Maintain Target Proportions

	Number in 1972	Number in 1982	Approx. Annual Growth Rate 1972-1982	Total Number Added	Average Annual Increase
Higher Education	169,337	1,038,514	19%	869,187	86,919
Secondary	1,065,658	5,097,145	17%	4,031,487	403,149
Elementary	4,052,169	8,610,267	7%	4,558,198	455,820
Illiterate	3,786,266	---	-337%	(3,786,266)	(378,627)

c. Possible ERTI Roles and Activities

i. Full Responsibility

For NIRT's and its own needs, ERTI could develop technical and vocational training using the media. This could complement the Institute for Cinema and Television's programs.

In addition, ERTI could consider the use of Learning Resource Centers and mobile units for occupational training. The Centers in particular could consider establishing fixed workshop facilities in skill areas with steady demand.

ii. Support Role

Each of the programs underway or planned by the institutions now involved in occupational training might benefit from the use of broadcast or non-broadcast media. Little information is presently available. ERTI is presently producing high school vocational programs for TV, a guidance cycle program on irrigation and paramedic training courses for the FUI. This role can continue while other major areas of expansion are examined.

d. Potential Impact

The desired impact is to fill the gap between the supply and demand of skilled workers. The rate at which this is accomplished is a function of the output of the formal school system, the effectiveness of the NWLC programs, the wage structure and the rate of economic expansion. The analysis of Ref. 12 can be extended to show the problems of not having the needed skills and the importance of the training programs in terms of boosting the economy.

e. Importance of ERTI

The value of various media has been briefly studied by Stanford University (Ref. 19). Preliminary results are available indicating a small role for broadcast media but good possibilities for video cassettes and audio tape with workbooks or slides.

f. ERTI Resources Required

Small individual commitments would be required in terms of media production. However, ERTI assumption of full responsibility could

involve a large planning, curriculum design and operational effort. Again, it is not possible to make firm estimates until there is some definition of what is going on in Iran and how ERTI can support or complement those activities.

g. Risk Assessment

Little can be said now except that the need is great and worth considering. Care should be taken to pick subjects in which media have a proven success record. There is apparently no real competition to ERTI.

h. Appropriate Action

With completion of the present phase of the Stanford study, it may be necessary to continue the assessment of the use of media in occupational training (Ref. 19).

Requests should be made to the Manpower Planning Bureau, Plan and Budget Organization, for an assessment of skill needs in more detail than currently available from Ref. 9. The information should include an evaluation of which demands will hold over any significant period (5-10 years) and be candidates for major investments.

Institutions conducting training programs should be surveyed to determine their interests in the use of media. This, however, should not be done until after ERTI has a clearer picture of what skills are best taught with each medium based on continuation of the work reported in Ref. 19.

6. Agricultural Training

a. Iran's Needs

Iran is not self-sufficient in agriculture. Table A-9 demonstrates the production needed by 1992 to achieve self sufficiency and the levels considered feasible (from Ref. 13). The major production increases would come from over two million small-to-medium-sized farms. These farms account for up to 80% of the agricultural land in Iran. 84% of Iran's farms are less than 10 hectares, with an average farm size for all farms of 6.1 hectares.

According to agricultural experts two and even threefold increases in production can be achieved with simple changes in technique

Table A-9 (from Ref. 13)

The Recommended Pattern Compared with Forecast Demand

Commodity	1371 (1992) Demand (thousands of tonnes)	Forecast Gross Production (thousands of tonnes)	Percent of Forecast	Production Increase Over 1972 Percent
Wheat (human)	7386	7426	100	180[1]
Rice (paddy)	2618	2731	104	251
Pulses (human)	431	431	100	408[1]
Soya, Sunflower, & Cotton Seed	1492	1280	86	372
Vegetable Oil	498	421	85	
Sugar	1866	1626	87	265
Potatoes)		2200		551
Cucurbits)	6461	3070	130	240
Market Garden Crops)		3151		516
Fruit & Nuts	5311	4792	90	278
Cotton Lint	300	256	85	150
Linseed Oil	no projection	5	--	--
Mutton[2]	1142	344	30	88
Beef	489	157	32	45
Milk	7993	3443	43	79
Poultry	368	405	110	440
Eggs	328	361	110	325

[1] of gross production
[2] including goat meat

and provision of needed inputs of seed, water, fertilizer and equipment. At present the Ministry of Agriculture is having problems in providing the training component, particularly in the areas with highly dispersed populations. Some means has to be found to accelerate the provision of extension services on a larger scale.

b. Other Institutional Capabilities

There are several institutions in the Ministry of Agriculture with the capability to design the subject matter for agricultural training. A list of the experts and their institutional affiliations is found in Ref. 14. In addition, the delivery of the extension services by the Ministry of Agriculture would have to be an integral part of any training program.

The NIRT networks have the broadcasting capability and have shown an interest in this type of programming.

c. Possible ERTI Roles and Activities

Based on the work reported in Ref. 14, televised instructional programs should be effective. Where TV is not available, radio and other media should be considered. However, video cassettes or tapes of the TV broadcasts with a portable player may be the best non-broadcast approach. Whatever the approach, ERTI in all cases would be in support of the Ministry of Agriculture and the National Cropping Plan.

TV and radio informational and motivational programs would be needed to support the effort.

d. Potential Impact

Based on the judgment of agricultural experts (Ref. 14) a two to threefold increase in production is possible.

e. Importance of ERTI

ERTI has the planning, program design and broadcast capability. The use of broadcasting can be important in reaching a large number of farmers.

f. ERTI Resources Required

The core set of courses identified would require 50 to 60 hours of television programming. The informational and motivational

programs would be a relatively small percentage of that.

g. Risk Assessment

The following points can be made:

- The Ministry of Agriculture may emphasize support for agribusiness versus small farmers. Even if this occurs, the small farmers should not be ignored as stated on the National Cropping Plan (Ref. 13). It would be economically and socially unsound to leave such a major group out of the development process over the next 20 years while waiting for agribusiness to develop. It must be emphasized here that the proposed training program could have an immediate effect on production. Even if a third alternative develops between agribusiness and small farms, there is a need now for improving production. At present small farms contribute 77% of marketable surplus, compared to only 47% from agribusiness.

- The Ministry of Agriculture and the experts contacted from other institutions appear to support the idea of TV-based instruction.

- Channel 7 (NIRT) production people are interested in the project and have initiated some activities of their own. At issue is ERTI's responsibility for areas where direct training is the objective so the situation should be clarified and a solution sought which gives ERTI a major role if not full responsibility. In particular for this program, ERTI has a lot to gain in terms of credibility because of the expected outcome.

- The expectation of a good outcome is based on the successful experiences of the Indian SITE experiment, and the judgment of the agricultural experts consulted during the design of the program reported in Ref. 14.

- Implementation problems may be serious in terms of
  - the availability of broadcast time,
  - training and cooperation of agricultural extension agents, and
  - coordination with other government projects such as provision of seeds and fertilizers.

A systematic approach for program production and broadcasting will be found in Ref. 14. The other problems will have to be assessed

by discussions with the Ministry of Agriculture and others as needed.

h. Appropriate Action

As the Stanford planning effort concludes, ERTI could begin direct discussions on the following:

- Resolution of who within NIRT will be responsible for agricultural training programs.
- Procedures for formal acceptance by the Ministry of Agriculture of the program and its implementation.

7. Teacher Training

a. Iran's Needs

Pending confirmation by the Ministry of Education, the best available data on the shortage of teachers is represented in Fig. A-1. The data in the figure does not attempt to represent the total number of teachers working in the schools. They are an estimate of the number of qualified teachers. The discrepancy between the number of qualified teachers needed and those available shows the number required in the nation's training programs. The ability of conventional training to meet the need is also shown.

Tables A-10 and A-11 show details on the 1352 enrollments and staffing of the schools and on the data projected for 1356. These data were the basis for the projections shown in Fig. A-1.

b. Other Institutional Capabilities

The following institutions have the ability to operate teacher training programs. The major interests of each institution are identified:

- The Ministry of Education is interested in expanding in-service training but no definition is available at this time. ERTI is now implementing Instructional Development Institute (IDI) to help teachers learn how to use educational technology.
- The Free University of Iran (FUI) is presently working with ERTI in the development of a teacher training program. The FUI has the curriculum development capability, staffing and local learning centers to conduct a major program.
- The Teacher Training University may be interested in an extension program to allow it to reach more students.

Table A-10 (from Ref. 9)

School Population, Enrollment and Instructional Staff, 1352 (1973-1974)[2]

DESCRIPTION		SCHOOL AGE POPULATION	SCHOOL ENROLLMENT	PERCENT ENROLLED	INSTRUCTIONAL STAFF
Kindergarten		2,093,000	41,000	2	947
Primary	Ordinary School	4,602,000	3,143,820	79.3	96,000
	Ed. Corps School		507,950		19,000
	TOTAL		3,651,770		115,000
Guidance Cycle		2,408,000	906,000	37.6	33,000
High School		2,853,000	838,000	29.3	25,000
TOTAL		11,956,000	5,436,000	45.5	173,947

Table A-11 (from Ref. 9)

Initial Conditions - 1356 (1977)

A. Enrollments and Staffing in Schools

Grade	Enrollment (1000)	Population (1000)		Instructional Staff and Credentials				
				Less Than Normal School	Normal School Certificate	Associate Degree	Bachelor's Degree	Literacy Corps***
5	804	914	Primary*	64,000	60,000	0	0	23,000
6	525	887	Guidance Cycle	0	18,000**	33,000	0	0
7	510	861						
8	495	836						
9	344	812	Secondary School	0	30,000	0	12,000	0
10	314	788						
11	305	765						
12	296	743						

* Instructional staff are shown for grades 1-5.
** Normal School Certificate or High School Diploma.
*** Members serve two years in lieu of military duty. Assumed to phase out when not needed.

B. Teacher Training

NORMAL SCHOOL		GUIDANCE CYCLE TRAINING CENTER		COLLEGE/UNIVERSITY				
				Enrolled			Staff	
Enrolled	Staff (BA, BS)	Enrolled	Staff (BA, BS)	BA,BS	MA	Ph.D*	MA	Ph.D
5,610	187	11,400	380	1,020	25	1	24	11

*No Ph.D. program assumed for 1356. Assumes one student per year receives Ph.D. abroad.

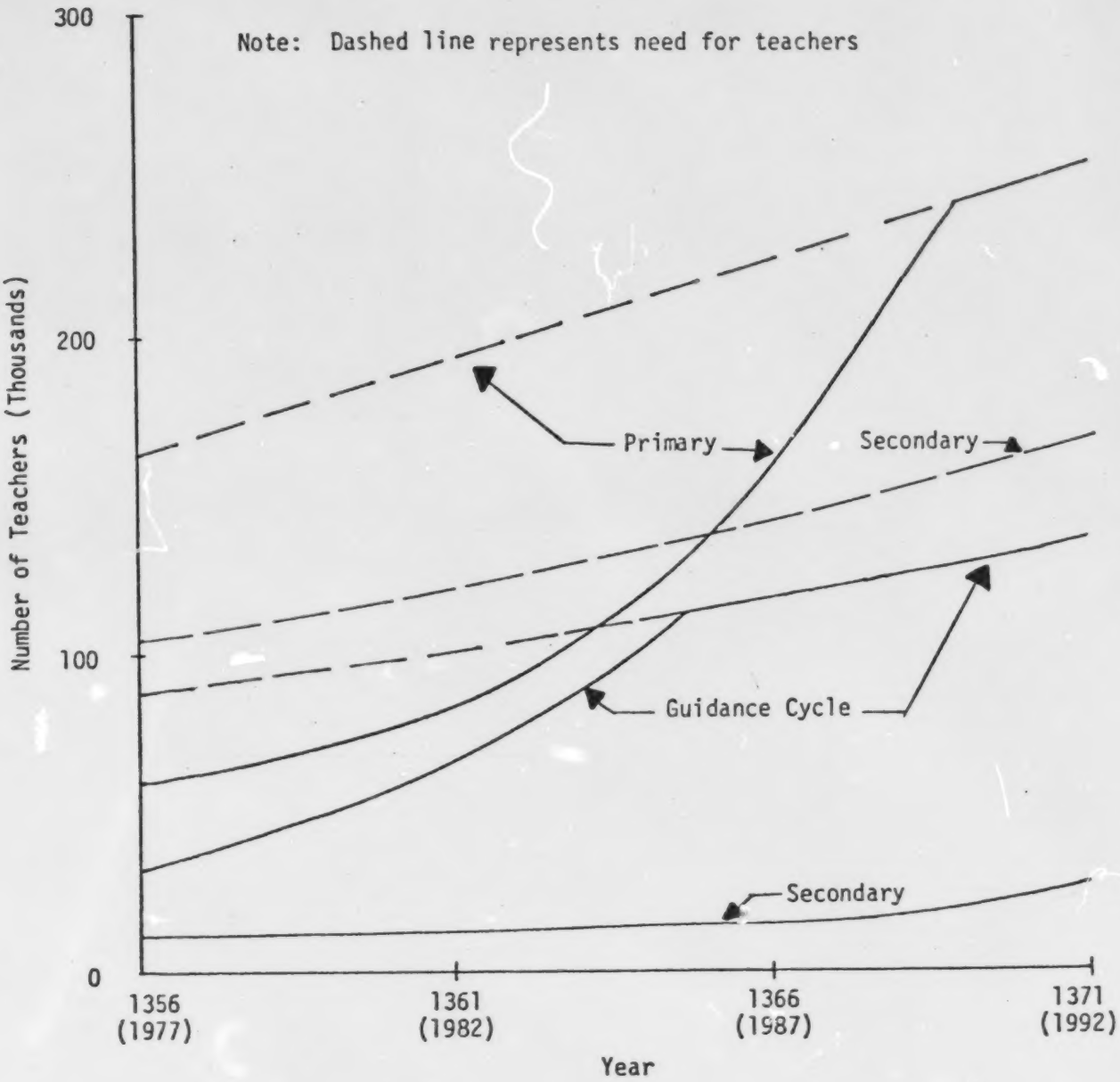


Fig. A-1 Teachers Trained under Traditional System (from Ref. 9)

c. Possible ERTI Roles and Activities

For the various programs listed above, ERTI is best suited for a support role. Other media than TV and radio may be useful such as IDI style workshops but in the absence of a proven benefit, should have second priority to broadcasting.

Another possibility for improving teaching is to demonstrate the importance of new concepts with model schools. This would appear to be reasonable only if the Ministry of Education were not receptive to improved teaching methods.

d. Potential Impact

Any new teacher training programs should attempt to reduce the time it takes to fully staff the schools from what is shown for the present conventional system in Fig. A-1.

e. Importance of ERTI

i. Television

Figure A-2 shows what can be done with the use of television. The amount of time to meet the need for primary teachers is halved with TV compared to conventional training (six vs. thirteen years). There is no change in the time for meeting the guidance cycle need for teachers with TV. This is due to the fact that the conventional effort to prepare guidance cycle teachers is well-supported. However, the use of TV in guidance cycle teacher training does save resources that can be applied to other teacher training. The major effect is seen in the impact on high school staffing. After 15 years the conventional approach is expected to meet only 20% of the demand. With TV, the demand could be met in as little as 13 years.

These results are based on the assumption that as many people as are needed would enter teacher training. This is not realistic in cases such as Iran where up to 20% of the high school graduates could be trained by a TV-based system, the amount calculated in the derivation of Fig. A-2.

To show the effect of a reduced number of entrees into teacher training the impact of TV was recalculated assuming no more than 10% of high school graduates would enter teaching. The results,

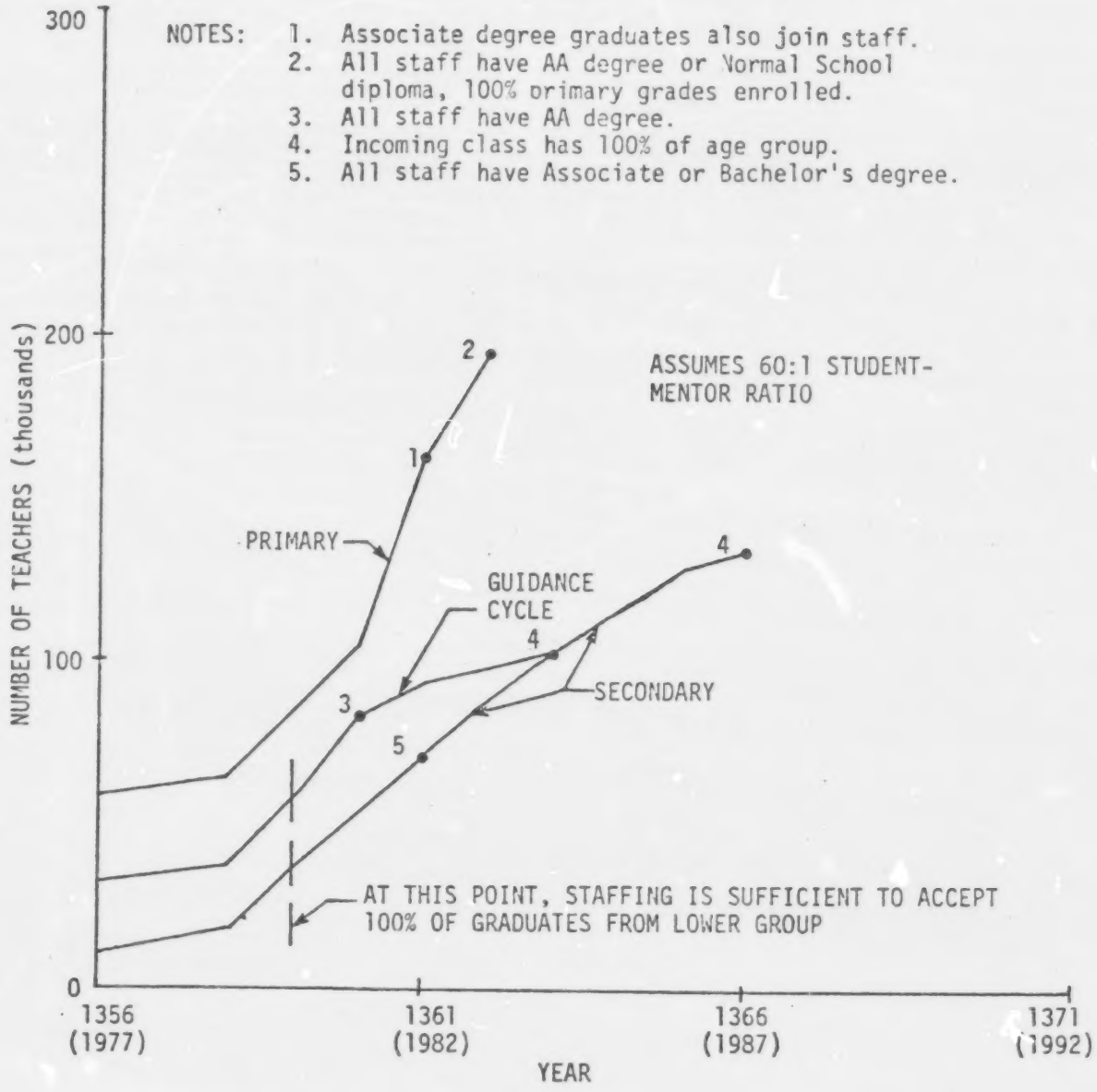

NOTES:
1. Associate degree graduates also join staff.
2. All staff have AA degree or Normal School diploma, 100% primary grades enrolled.
3. All staff have AA degree.
4. Incoming class has 100% of age group.
5. All staff have Associate or Bachelor's degree.
ASSUMES 60:1 STUDENT-MENTOR RATIO
NUMBER OF TEACHERS (thousands)
300
200
100
0
PRIMARY
GUIDANCE CYCLE
SECONDARY
AT THIS POINT, STAFFING IS SUFFICIENT TO ACCEPT 100% OF GRADUATES FROM LOWER GROUP
1356 (1977)
1361 (1982)
1366 (1987)
1371 (1992)
YEAR

Fig. A-2 ETV Used to Train Primary, Guidance Cycle and Secondary Teachers (from Ref. 9)

shown in Fig. A-3, are less dramatic than those shown in Fig. A-2. TV saves only two years in meeting the primary goals and actually falls behind the conventional system in meeting guidance cycle needs. However, the analysis carefully balanced the assignment of teachers to match the increasing enrollments starting in first grade. This finding indicates there may at present be too much emphasis on the guidance cycle. Again, the effect on training high school teachers is significant, changing only one year (from 13 to 14) by comparison with Fig. A-2. These results demonstrate the potential of TV in Iran. Questions remain on how many people can be attracted to teaching, how closely the conventional training system can match the projection of its capabilities in Fig. A-1, and whether alternative schooling patterns might affect the need for teachers shown here. The major conclusion reached to date is that the potential justifies expanded ERTI participation in teacher training programs, particularly for the high school level. Work should continue to justify where in the teacher training system ERTI can play useful roles.

ii. Other Media

The major focus has been on TV because of its proven ability to teach (Ref. 9). Radio may also be effective, but there is less evidence. Before a major commitment could be made to use radio, either more evidence of its effectiveness has to be found or experiments have to be run. Non-broadcast media are less cost-effective than the broadcast media for the type of programs considered here. The IDI workshops should be assessed for its effectiveness vis a' vis other means of distribution.

It may be necessary in the case of TV broadcast coverage or scheduling limitations to use video cassettes or video tapes and portable players. This is more costly than broadcasting but may be justified in meeting the need for teachers.

iii. Model Schools

The possibility of developing model schools to demonstrate the effectiveness of teaching methods has been mentioned. While a real possibility, there would have to be substantial evidence of potential success to justify such a venture. That evidence is not available at present.

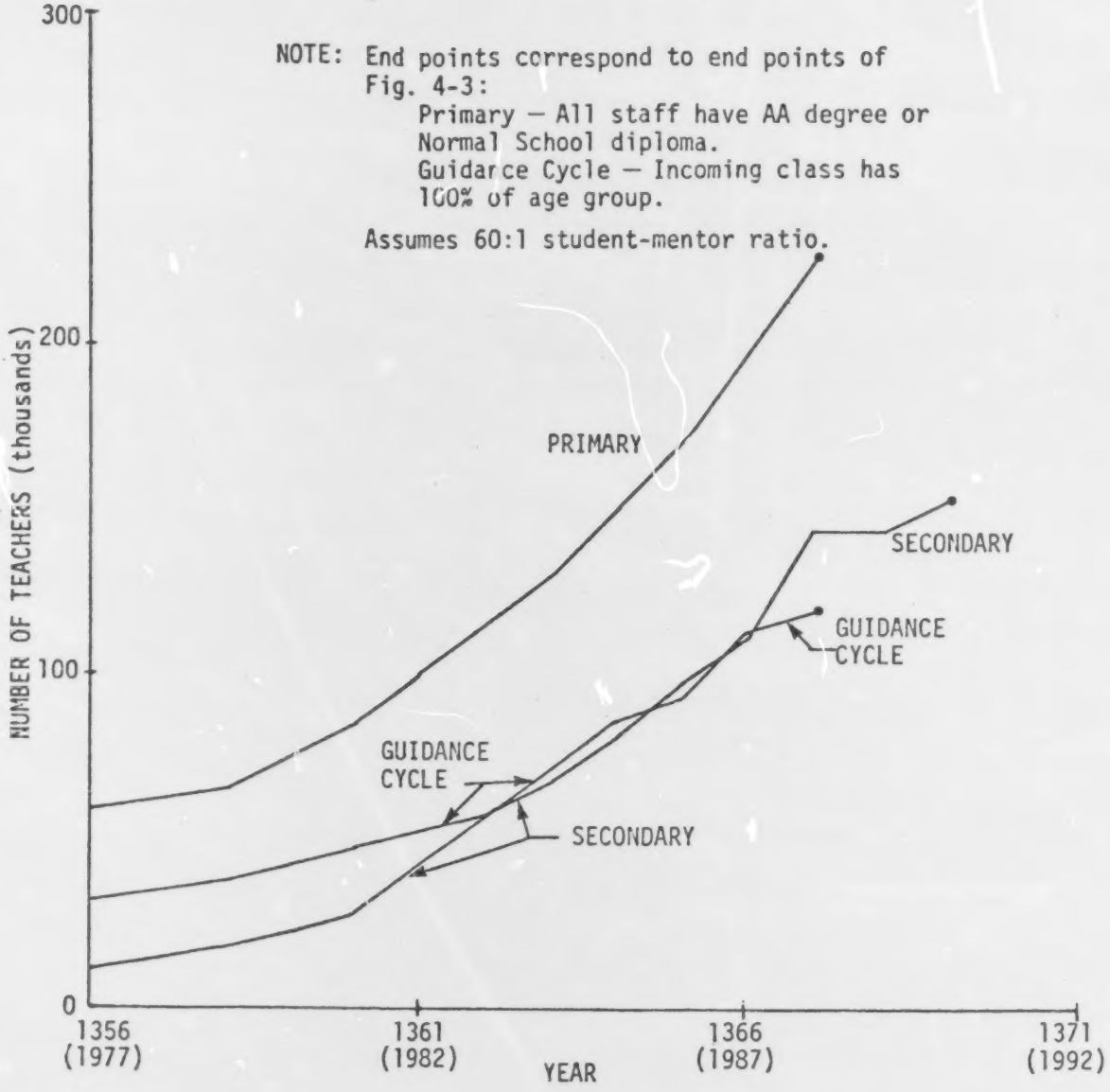


Fig. A-3 ETV Used to Train Primary, Guidance Cycle and Secondary Teachers; half the Trainees assumed in Fig. A-2 (from Ref. 9).

f. ERTI Resources Required

On the order of 350 hours of television programming would be required for a two-year college program. Some 700 hours would be needed for a four year program. No estimates are available on non-broadcast media, except that expansion of IDI is feasible at ERTI.

The operation of model schools would require many skills not present at ERTI. The effort would require planning resources for beyond ERTI's present capacities.

g. Risk Assessment

There are several concerns for potential problems:

- Inappropriate curricula may negate the effectiveness of the training programs, particularly in rural areas. ERTI should support efforts to test the need for regionalization within Iran or changes from Western training models in general.
- The Ministry of Education must change the incentives for becoming and staying a teacher. Otherwise, the training efforts will not succeed in meeting the demand for large numbers of teachers.
- The Ministry of Education may not want to use resources for television in teacher training when it is already committed to in-school programs for teachers.

On the positive side, the potential of TV in teacher training has strong evidence in its favor. The commitment of FUI is further evidence that the value of TV is recognized. More can be done, however, to solidify the arguments.

h. Appropriate Steps

The following steps would provide a sound basis for ERTI to determine its level of participation in teacher training.

- Update the analysis of TV's importance to teacher training using a computerized version of the analytical model of Ref. 9 (Chapter IV), and improved data on Iran's school system and conventional teacher training program.
- Review with the FUI, Ministry of Education and Teacher Training University the extent to which they would consider using television.

- Propose to the Ministry of Education a joint study to assess the relative value of in-school and teacher training uses of TV. This would aim to establish clear objectives for each use and better rationale for the final allocation of resources.
- Prepare plans for ERTI's role in the Ministry of Education in-service training and the Teacher Training University's extension service. If FUI is receptive, propose more extensive use of TV in its program.
- Assess the effectiveness of IDI to determine if ERTI should continue involvement beyond the present commitment or devote all its resources to other media.

8. Primary School

a. Iran's Needs

As indicated earlier in the discussion of the need for non-formal basic education, the data on primary schools is not very clear. In addition to the numbers quoted in the section on basic education, the 197? Statistical Yearbook (Ref. 15) indicates that enrollments in the primary schools are about 70% of the age group.

But low enrollment is only one problem. Another is the failure to keep children in school because of poor teaching, inadequate facilities and materials and lack of motivation on the part of the students. The estimate quoted in the section on basic education places the first grade dropout rate at 25% in 1976. This estimate, from Ref. 8, places the rate at 30% in 1973 (1352), and estimates a reduction of 1% per year. This estimate of dropouts is well within reason. In Brazil, the rate is 50% in rural areas.

Both student learning levels and the dropout rate can be affected by basic teaching philosophy. The present emphasis on rote learning is not effective in preparing children to become adults in a modern society. The lack of motivation with rote learning can also contribute to the dropout rate.

In order to resolve these problems of low enrollment, high dropout rate and the rote learning philosophy, means must be found to

- Increase the number of teachers, or find means of substituting for missing teachers.
- Improve the quality of teaching and change the basic philosophy, either by teacher training or by imposition

of improved teaching by going directly to the children through a medium such as TV.

- Improve the quality of teaching materials.
- Improve the children's motivation.

b. Other Institutional Capabilities

The Ministry of Education is the principal institution to deal with this problem. The Ministry's activities involve teacher training, development of materials and provision of facilities. The solutions to the problems of the primary schools will have to come through the Ministry but may be influenced by other agencies such as ERTI acting in a support or critic role.

c. Possible ERTI Roles and Activities

As a support agency ERTI could provide a range of broadcast and non-broadcast materials for the primary schools. The organization might also, as discussed under the section on teacher training, operate a model school to demonstrate improved teaching and the use of media of various types.

The major issue with regard to the primary schools is that the media are not as effective a means of dealing with the teacher shortage as it is with mature students. The best case identified of the successful use of TV at the grade level achieved an increase of only 15% in the student teacher ratio (Ref. 9). Even that is achieved by grouping classes, something Iran cannot do in the rural areas where the need is greatest. The training of teachers can make much better use of ERTI's resources.

TV is used successfully to make up for poor teaching skills in specific subjects. However, the cost-effectiveness of this use is not clearly defined. It is a function of the objectives set for TV to improve student learning. This can be analyzed but the objectives set by the Ministry of Education and the ability of the TV-based response to meet those objectives have to be determined.

It is even less clear how much TV or other media can contribute to the reduction of the dropout rate. Experimental results from the SACI project in Brazil, which is a combined in-school and teacher

training effort are expected to show benefits, but the results are just now being made available. These results and those from similar efforts elsewhere, should be examined to assess what effects can be attributed to the use of TV.

This problem of changing the basic philosophy of education away from rote learning is best addressed by dealing directly with the teachers through pre-service and in-service training. The use of model schools might be a convincing way to show the effectiveness of discovery methods of learning. However, as indicated in the discussion on model schools under Teacher Training, assuring such results is a major effort and might not be warranted for ERTI.

There is one area, special education or education of the mentally and physically handicapped, where ERTI might play a significant role using broadcast or non-broadcast media. Data have not been found to verify the need, however, it should be reasonable to conclude that when the nation's education system does not satisfy the basic education demands there are worse shortages in dealing with special problems such as educating the handicapped. In that situation, the media might be used to train classroom teachers to help alleviate if not solve problems. In addition the media might be used to teach children directly and help parents deal with their handicapped children.

d. Potential Impact

Increased enrollments, reduced dropouts and improved learning will be achieved only by the combined efforts of many programs. Specific programs such as the use of media, broadcast or non-broadcast, can succeed only to the extent that issues such as designing curricula and teaching methods to match local needs; provision of adequate facilities; teacher salaries, benefits and working conditions; and parent support of the schools are resolved. In the case of special education the results are more definite: a change in the number of handicapped children achieving desired levels in school.

e. Importance of ERTI

The importance of the use of the media is not sufficiently defined. As indicated above, an analysis of objectives, the possible

means of utilizing media to achieve them, and the results of similar efforts elsewhere should be conducted. In particular, the tradeoff between using media directly with children and using it for teacher training has to be assessed.

There are many problems in preparing teachers to properly use the media, coordinating schedules for broadcast, and distributing and maintaining equipment for non-broadcast media that limit the potential impact of ERTI.

f. ERTI Resources Required

The production of TV programming for primary grades is presently at a low level. The total amount would probably need exceed 100 hours per year. No estimates are available on the amount of effort that might be expended on the development of non-broadcast media.

The planning, implementation and operation of model schools would be an enormous undertaking. ERTI does not have the staff to do it now and would probably have to contract out the major part of the effort.

g. Risk Assessment

The following points can be made:

- For the given level of investment, the benefits of in-school programs for children may not be sufficient when compared to other approaches, principally teacher training. The major concern here is that the issues have not been clarified on the value of the programs for increasing learning and reducing dropouts.
- ERTI is obliged to respond to requests from the Ministry of Education for programming. If the requests are not well substantiated, ERTI might have to participate in programs with little or no benefits.
- Materials prepared by ERTI may not be used due to lack of acceptance by teachers and scheduling and maintenance problems.
- The Ministry of Education may not be receptive to ERTI having model schools. Even if the Ministry approved the benefits from such a large effort could be very small.
- For special education, the need is clearer and benefits more visible.

h. Appropriate Action

If ERTI and the Ministry of Education were to jointly assess the tradeoff between in-school programs and teacher training, the basis for a mutually acceptable balance of programs might be reached. In the absence of Ministry interest in such an effort, ERTI would still benefit from an appraisal of the problem that could be used in its negotiations with the Ministry. Special education should be carefully considered, perhaps building on ERTI's program for the deaf.

9. Guidance Cycle and Secondary Schools

The issues at these levels are similar to those for the primary grades. There are two differences, however:

- As the student age level increases the effectiveness of using TV to substitute for live lecture increases. The amount of lecture time increases at higher grades, and the study disciplines of students also improves. By the 12th grade, the effect should be close to that with college and university students.
- In the high schools there is a certain amount of specialization, particularly in vocational subjects, where the regular teacher might serve a mentor role while lacking the particular subject skills.

The comments in the section on primary schools concerning the need for a tradeoff analysis between in-school and teacher training programs apply here as well.

10. Higher Education

a. Iran's Needs

The need for higher education is demonstrated by the data in Tables A-4 and A-8. Iran's development activities are seriously constrained by the lack of college level education in the professional, technical, management and administration fields. These four areas within higher education have to receive greater emphasis than the others.

The total conventional higher education system is expected to be able to graduate 31,000 students in 1977. This represents a major expansion over the 1972 number of 20,102, but falls far short of the 114,000 needed. Some means is needed to provide rapid expansion.

b. Other Institutional Capabilities

Iran's universities and colleges should be the source of curriculum.

c. Possible ERTI Roles and Activities

- ERTI can become involved in the following ways:
- Studio production of college or university courses,
- Provide planning support for the expansion of college and university enrollments using TV,
- Help establish live studio classroom operations, and, if appropriate, broadcast the lessons.

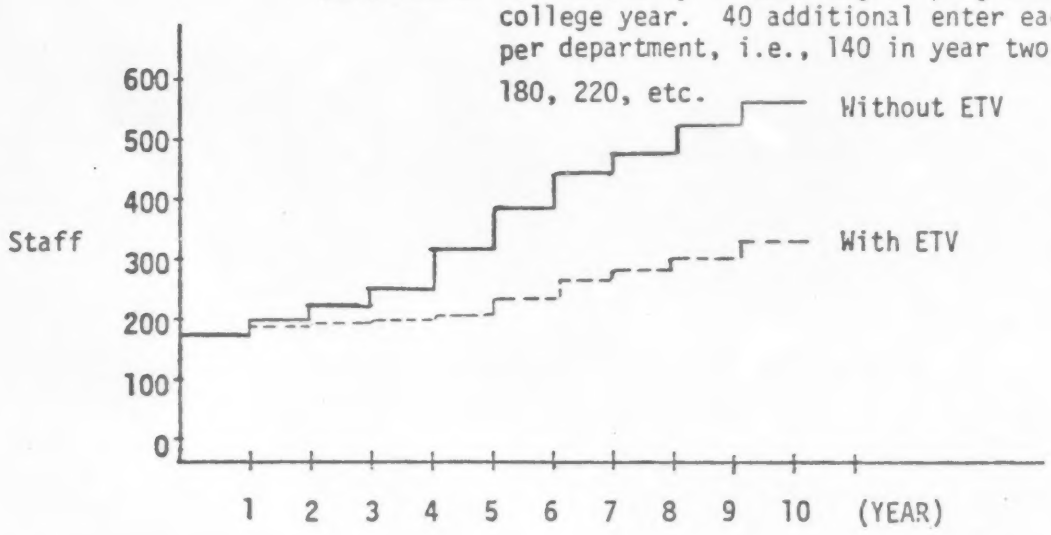
d. Potential Impact

The use of TV for expanding college and university enrollments is explained in Chapter III of Ref. 9. The experiences of successful TV operations at the college and university level show that there can be up to a fourfold increase in the student-teacher ratio. In addition, the use of TV to carry the lecture allows the use of up to 22 teaching assistants, each handling 30 students. A single professor in that case can handle 700 students.

In Iran, Pahlavi University has successfully used TV to expand enrollments in selected courses. During the spring semester of 1975, three TV courses were broadcast in the Shiraz area: Farsi, psychology and business economics. Over 6,000 students enrolled: of these, 2,000 completed the courses and 1,800 passed the examinations.

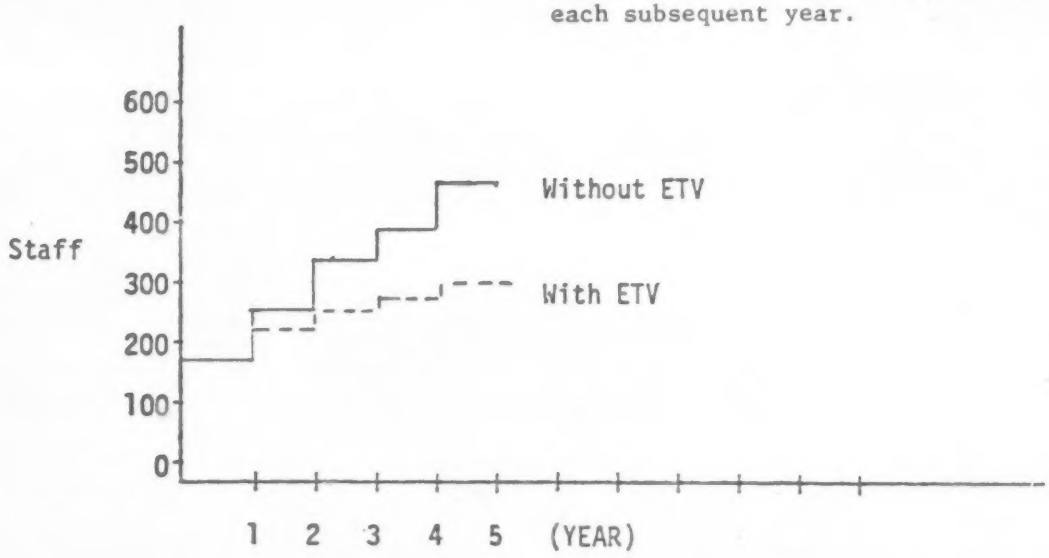
Pahlavi's curriculum was analyzed with a computer program at Stanford that determines the number of hours of TV programming and the staffing needed to accommodate a specified growth in enrollments. The results of the analysis, reported in Ref. 16, are that TV significantly reduces the amount of additional staff needed to handle increased enrollments. Figure A-4 shows the total staffing needs, with and without TV for high and low enrollment increases in Pahlavi's School of Engineering. Figure A-5 shows for the low enrollment case the breakdown of staff assignments among regular lecture project and laboratory instruction and mentor roles. With TV there is much less emphasis on lecture faculty. This means that a smaller number of highly qualified faculty are needed.

Enrollment: 100 initially in each degree program for each college year. 40 additional enter each year per department, i.e., 140 in year two, then 180, 220, etc.



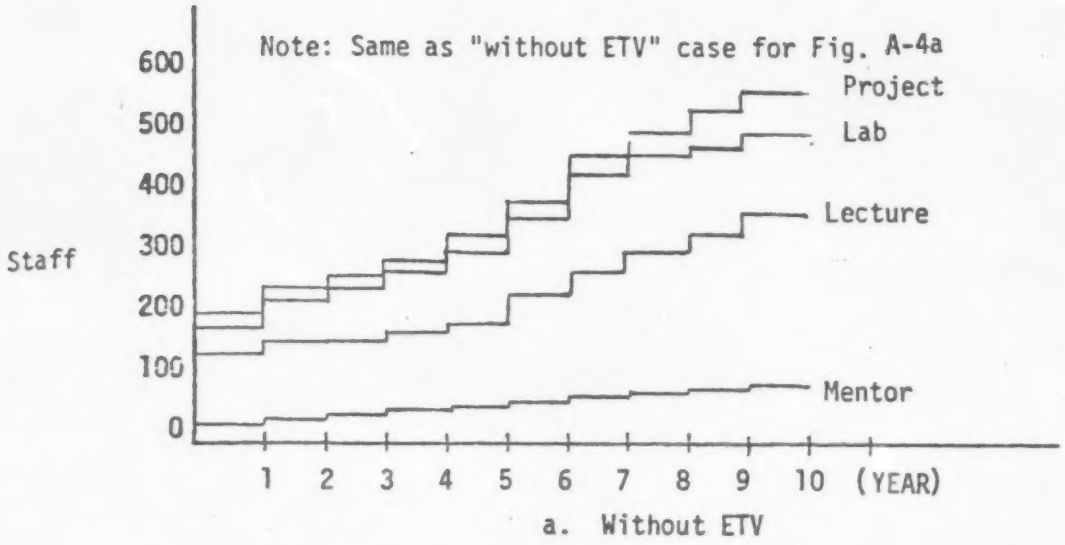
a. Small Annual Enrollment Increase

Enrollment: 100 initially in each degree program for each college year. 300 enter each subsequent year.

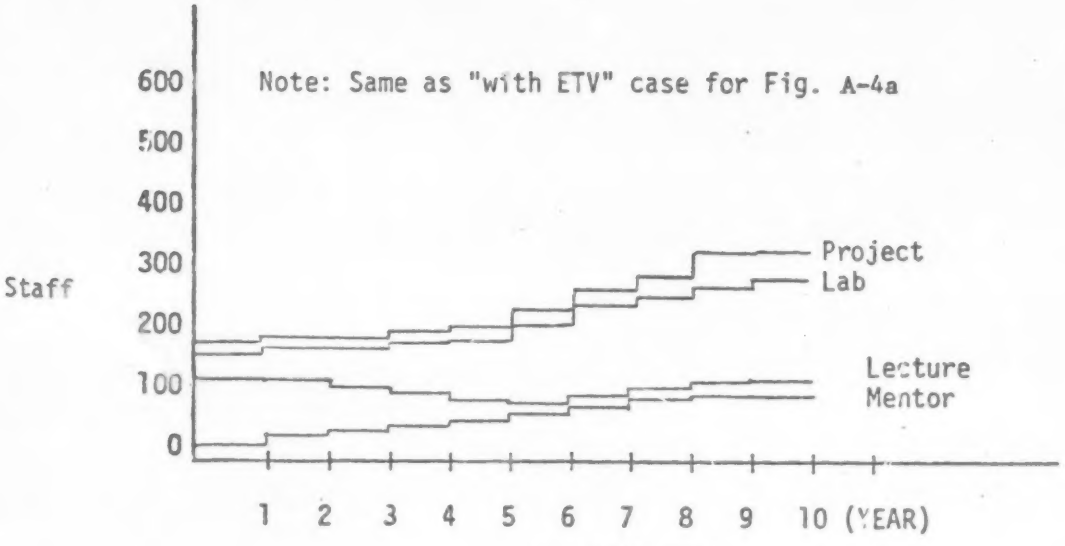


b. Large Enrollment Increase

Fig. A-4 Total Staff Requirements (from Ref. 16)



a. Without ETV



b. With ETV

Fig. A-5 Staff Assignments (from Ref. 16)

An important consideration in the use of TV at the university level is that a number of universities have proven the effectiveness of "live studio classroom" programs. The Stanford Instructional Television Network broadcasts four channels of programs, five days a week. A total of 4,230 hours out of capacity of 5,000 hours were broadcast in 1973-74. This consisted of 150 graduate engineering courses.

The cost per hour of producing this programming is only $118. The system is simple, broadcasting a conventional lecture using two cameras in a special classroom. One views the lecturer face-on, while the second is an overhead camera to show visual material the lecturer places on the desk. Student assistants operate the cameras while a single engineer and another student assistant oversees the whole operation.

Iranian colleges and universities might find the live studio classroom the most cost-effective way to expand. The transmission problem can be handled in a number of ways: existing channels, broadcast at frequencies requiring special receivers, broadcast at standard frequencies but a new channel, or cable.

It has been proposed within ERTI that TV is not the most suitable medium for lecture courses. Radio plus slides or other visual material might work as well and be less costly. An example of the latter is found in a series of radio broadcasts to doctors in the Albany, New York area of the United States. Apparently it has been successful. ERTI might explore these alternatives to the use of TV.

e. Importance of ERTI

It is possible for a university to establish and operate its own live studio classroom system at low cost and without ERTI's involvement. EPTI can place itself in an important position by (1) gaining capability on planning the systematic introduction of TV and (2) assuming responsibility for establishing transmission capability.

The planning capability plus production capability can give ERTI an important role in regular studio production of university TV or radio courses. The universities would not be expected to compete in studio production because of ERTI's mandate.

f. ERTI Resources Required

The combined Schools of Engineering and Arts and Sciences would require on the order of 9,000 hours total, or an average of 1,800 hours per year of programming to put all the lecture courses on TV or radio. Even with simple production procedures this would require far more than ERTI's TV capacity and probably exceed its radio capacity. Therefore, any substantial use of TV by the universities would have to use the live studio classroom or wait for ERTI to expand its capacity. It is not clear what alternatives exist for radio production. In the terms described above, live broadcasting of radio may not be feasible because of the coordination required with the visual material.

Since the universities are responsible for the content design of their courses, ERTI would not have to devote any effort to that part of program development.

g. Risk Assessment

The evidence of success at Stanford, plus Pahlavi's success would indicate that a high level of confidence can be placed in the success of TV-based university programs. It may still be desirable to initiate pilot projects to assess any modifications that might improve the concept for Iran.

For ERTI university level TV offers an opportunity to have a major impact with a small investment. It is important for ERTI to establish a significant role.

The effectiveness of radio is not sufficiently verified to warrant making as strong a recommendation for its use. The Albany medical programs and other similar operations should be examined. Radio does have the advantage of nearly 100% coverage of Iran vs. about 50% for TV. However, the distribution and maintenance of slide projectors and other equipment may be costly. A thorough comparison of TV and radio use is needed.

h. Appropriate Steps

The following steps should be taken if ERTI is to assume a major role:

- Explore with Pahlavi the expansion of its TV activities using the Stanford computer program to assess the implications of alternative plans.
- Explore with other universities the use of TV.
- In all cases consider how a live studio classroom could be used.
- Assess the feasibility of radio-based university programs and compare to TV-based programs.

11. In-Service Training

a. Iran's Needs

The need for professional, technical, administrative and management skills was stated in the section on higher education. This section is concerned with the need for training those already employed in government, business and industry. The specific need is not measurable at this time but there should be little doubt that one exists.

In the United States there is great demand for in-service training of this type. The Association for Continuing Education (ACE) is a non-profit organization which broadcasts TV courses over the Stanford Instructional Television Network. They are designed to meet the needs of business and industry in the San Francisco area. Despite the large number of highly professional, technical, administrative and management personnel in the area, plus a number of highly ranked universities and colleges there is high demand for ACE services (Ref. 9). In terms of Iran's shortage of such personnel and the institutions to train them, the demand in Iran for this or similar non-broadcast services must be greater.

A related service is the use of video cassettes as a rapid means of disseminating executive messages from central management to office managers located in different cities (Ref. 19). The video cassettes reduce the need for an institution's top executives to travel to branch offices, provide more direct guidance to managers who might not otherwise see top management, and provide more rapid response to directives. By describing the decision process and institutional policy and procedures, this material serves as in-service training for lower

level managment. This is undoubtedly an important area of concern in Iran. However, the extent to which this process can improve the situation is not clear and would require study.

b. Other Institutional Capabilities

Universities and colleges can provide live studio classroom or studio produced TV and radio programming, other media, or conventional extension services. The Government Management Training Center (GMTC) has conventional programs.

The Iran Communications and Development Institute (ICDI) is interested in conducting a research program to determine the potential of the live studio classroom in Iran. Such an activity would fit with ICDI's training programs for professionals and its position as NIRT's research arm.

The management information system is so simple it could be undertaken by any institution internally.

c. Possible ERTI Roles and Activities

There are several options for ERTI:

- Support university and college extension services and GMTC programs, with broadcast or non-broadcast media.
- Act as a broker between institutions that want programs for their employees and the best sources of training. This is the role ACE plays in the San Francisco area, providing a range of options from single courses to full degree programs. The courses or degree programs are selected from the institutions best suited to meet the need (Ref. 9).
- Before starting an operational program, ERTI might cooperate with ICDI in a joint project to test the live studio classroom concept for TV as well as the use of other media.
- Provide planning and technical support for management information dissemination by video cassettes.

d. Potential Impact

Generally, the impact is similar to that described for TV in higher education. The use of TV permits large student-teacher

ratios and reliance on mentors to interact with students. The impact of radio or other media is not so clearly defined but could be similar. Where the non-broadcast media are less costly or significantly more convenient and at least as effective as the broadcast media, they should be used.

A major benefit for the students and their employers is elimination of travel to a class. The savings in time and costs for participatants in the ACE program are shown in Table A-12.

The potential of video cassettes for management information dissemination is not well defined. The need for improved management is well known, but the extent to which this particular method would help is not clear.

e. Importance of ERTI

As indicated earlier, ERTI participation in live studio classroom or other non-broadcast operations is not essential for their success. It is only if studio production or broadcasting is required that ERTI has a mandate. With non-broadcast media ERTI may not be unique.

f. ERTI Resources Required

As is the case for higher education, the studio production load for broadcast media could become significant. If live studio classrooms were to be used ERTI might consider building a facility and a distribution system. Until there is further definition of this activity, neither possibility can be properly assessed.

Non-broadcast media use could also be too much for ERTI's present capabilities. This has to be considered in planning any in-service programs.

The management information system would require planning and technical support from ERTI but little or no studio production.

g. Risk Assessment

The cost is low, the time needed for implementation is short, and the potential payoff is high for TV-based in-service programs, particularly for the live studio classroom concept in broadcast or taped (video cassette) mode. There is some question as to how well such

Table A-12 (from Ref. 9)

Indicators of the Effectiveness and Efficiency of the ACE Program

Indicator	Measure	Result
Number of students enrolled off campus	Total enrollment 1973-1974	2,670
Total savings in student commute time per year	Number of hours commute time x total enrollment[1]	
	@ 3 hrs/round trip	288,360 hrs/yr (or 139 man-yrs)
	@ 1.5 hrs/round trip	144,180 hrs/yr (or 69.5 man-yrs)
Total savings in commute cost (yr)	- Total enrollment x 240 miles/wk for 12 wks @ $.15/mile	$ 1,153,440
	- x 120 miles/wk	576,720
	- x 60 miles/wk	288,360
Increase in student population 1969-70 to 1973-74	- Total increase	617
	- % increase	74%
Increase in industrial users 1969-70 to 1973-74	- Total increase	18
	- % increase	100%

[1]Based on three courses per week and a twelve hour quarter

in-service activities would meet the needs of Iran's employers and employees, but the success of the U.S. operations suggests that similar results would occur in Iran.

The main problem in assuring success in this type of operation is finding clients who have a strong need for the service. ACE has not tried to force a particular education concept on its customers. Rather, it has sought to find potential customers with a clear requirement for a TV-based program. A program is then customized to satisfy the client. The same approach should be followed in Iran.

ERTI should be concerned with operational responsibilities for in-service programs. A joint program with ICDI to conduct research on the use of live studio classrooms might speed up implementation more than an effort restricted to ERTI.

The potential effectiveness of radio or non-broadcast media in this application is not as clearly defined as for TV but is definitely attractive. However, until it can be better defined it might be worthwhile using an effective, if not necessarily the best medium, TV. During the period of studying non-broadcast alternatives, much-needed services can be provided because in either broadcast or video cassette mode the TV-based services are easily started, as long as a simple format is kept. The TV could always be discontinued or kept at a low level of effort when and if alternatives are implemented.

The unknown impact of video cassettes on management procedures makes a strong effort in that area unwise until more can be learned of the specific needs in Iran. Small pilot projects could be done inexpensively to estimate the impact of larger programs.

h. Appropriate Action

The following steps are considered important in establishing a role for ERTI:

- Prepare a pair of prospectives for (1) studio production and (2) live studio classroom programs.
- Explore potential client interest among business, industry and government agencies in Tehran.

- Explore with ICDI the possibility of a joint research effort on live studio classrooms.

- In parallel with the preceding steps, explore cases of radio and non-broadcast media use for similar purposes to find out how effective they are by comparison with the use of TV.

- Briefly explore with GMTC and other institutions the potential of video cassettes for disseminating management information.

REFERENCES

1. Mass Communications Policy in Rapidly Developing Societies: Report of the Mashad Symposium, F. Hakimzadeh, ed., Iran Communications and Development Institute, Tehran, September 1975.

2. M. Tehranian, et al, Communications Policy for National Development: A Comparative Perspective, Iran Communications and Development Institute, Tehran 1975.

3. The Future Environment of Broadcasting and Implications for NIRT's Developmental Planning, Arthur D. Little International, Inc., Cambridge, Massachusetts, November 25, 1975.

4. Initial Plan for a National Literacy Campaign, National Centre for Adult Education and Training, Tehran, 1976.

5. M. Sabi, Literacy Projection of Iran's Population: In-school and Active Age Group, National Centre for Adult Education and Training, Department of Socio-Economic Analysis, Tehran, 1975.

6. Personal conversation with Mr. Vincent A. David, Manager, Adult Education (ETV), Lahore, Pakistan, May 1976.

7. R. Zaman, Short Preliminary Report on the Evaluation of the First Adult Literacy Project, 12 October 1975 - 30 April 1976, Pakistan Television Division, Rawalpindi, Pakistan, 1976.

8. D. Sheykhavandi, The Long-term Comprehensive Plan for Education 1972-1992, Tehran, 1974.

9. Program Planning Assistance, Vol. I of the first annual report to NIRT, Technical Report No. 2, Communication Satellite Planning Center, Stanford University, Stanford, California, August 1975.

10. Personal communication, F. Saba, Maraging Director ERTI, Tehran, October 1976.

11. A. Defever, "Integrated Development Support Communication in Dahomey," in Ref. 2.

12. J.H. Boettcher and L.T. Brekka, Manpower Forecasting Model for Educational Planning, Technical Report No. 13, Communication Satellite Planning Center, Stanford University, Stanford, California, December 1976.

13. National Cropping Plan, Final Report, prepared by Bookers Agricultural and Technical Service, Ltd., and Hunting Technical Service, Ltd., London, for the Planning Bureau, Ministry of Agriculture and Natural Resources, Tehran, August 1975.

14. Djafar Djawan, System Planning for Agricultural Education in Developing Countries, Ph.D. Dissertation, Technical Report No. 14, Communication Sateilite Planning Center, Stanford University, Stanford, California, December 1976.

15. Statistical Yearbook of Iran 1352 (March 1973 - March 1974) (Serial No. 623), Statistical Centre of Iran, Plan and Budget Organization, Tehran, June 1976.

16. B.B. Lusignan, B. Rezvani, S. Keister and L.T. Brekka, The Need for Higher Education in Iran, Technical Report No. 16, Communication Satellite Planning Center, Stanford University, Stanford, California, December 1976.

17. Personal Communication, A. Azadan, ERTI, August 1976.

18. L.T. Brekka and S. Karimi, "Status Report: ERTI," an internal ERTI report in preparation.

19. John Feilders, The Use of Media in Occupational Training in Iran, Technical Report No. 17, Communication Satellite Planning Center, Stanford University, Stanford, California, December 1976.